NEW REMEDIES.

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EDITORIAL.

ROBERTS BARTHOLOW, A.M., M.D. (of whom we give this month a portrait), the recently elected professor of materia medica in Jefferson Medical College, was born November 18th, 1831, in Howard County, Maryland. He is now, therefore, at forty-eight, in the full maturity of life. We learn from the Biographical Encyclopædia of Ohio that he completed his education at Calvert College in his native State, and in due course of time received from this institution the degree of Master of Arts.

He began the study of medicine immediately upon leaving college, and in the year 1852 graduated from the University of Maryland. He attended subsequent courses of lectures, however, in the years 1855 and 1856. In 1857 he entered the U. S. Army by competitive examination, passing first in his class. He remained in the army in various capacities, at one time having charge of one of the large hospitals in Washington until 1864, when he resigned to take a position in the faculty of the Medical College of Ohio. It was during his army service that the monograph on the Enlistment of Soldiers was written, a work that still remains official, and it was at this time also that he contributed an instructive series of papers to the Sanitary Commission, and published his work on Spermatorrhœa.

Dr. Bartholow was tendered, immediately upon his entrance into Cincinnati, the only position in the college then vacant, viz., the chair of Medical Chemistry. This chair had been hitherto filled for the most part by professional chemists rather than physicians, and the appointment of a physician, *pur et simple*, was regarded rather with disfavor by that large class opposed to innovations. Dr. Bartholow entered upon his new duties with characteristic zeal. He began to teach chemistry in its application to practical medicine. Instead of inorganic was substituted organic chemistry. The staid and plain sessions of the Academy of Medicine, which had been hitherto occupied in the narratives of the experiences of the older physicians, about as profitable as the "class meetings" of the Methodist church, began to be disturbed by reports on the analysis of drinking water, of cholera excreta—Dr. Bartholow was at this time put in charge of the cholera hospital—on sewage, ventilation, ozone, etc. It was in this chair of chemistry and in these studies that Dr. Bartholow laid the deep foundations of his education.

In 1869 he was transferred to the chair of Materia Medica, where he commenced the course which has since given him his fame. For his classical work on Therapeutics is really simply the condensation of his course of lectures. His lectures were illustrated with experiments exhibiting the action of drugs upon the lower animals, and his abundant writings at this time display in every direction the wisest research and the utmost fertility of invention. It was about this time that he wrote his Manual of Hypodermic Medication, his Russell Prize Essay on Quinia, his American Medical Association Prize Essay on Atropia, and his Fiske Fund Prize Essay on the Bromides. It is safe to say that he took the prize whenever he contended for it.

With the retirement of Prof. Graham, in 1874, Dr. Bartholow naturally drifted into the chair of Theory and Practice in the college, which position he has held and upheld to the present time. We can readily imagine that the question of accepting the call to Philadelphia must have been long and deliberately studied before it was accepted. Dr. Bartholow has by far the largest and most lucrative practice ever attained in Cincinnati, and what is even dearer to the heart of the true physician, enjoys in a singular degree the confidence as well as esteem of his patients. It is safe to say that Dr. Bartholow leaves all these allurements that he may have leisure to prosecute his studies. The Appletons are now publishing for him a large work upon Practice, which will represent the crowning efforts of his professional career.

Personally Dr. Bartholow is a man of average height, substantial build, reserved manner, intensely active, even restless habit. In lecture,

narrative, or debate he is singularly cool and calculating. He is choice of word, undemonstrative, incisive. An especial characteristic is his capacity for work. He was at one time pathologist to one hospital, clinician to another, and regular lecturer in the college. He was at the same time editor of *The Clinic*, the first medical weekly published in the West, was indeed one of the founders of it, was examiner and referee for a life insurance company, was contributor to all the new and many of the old journals, meanwhile attending to the ceaseless and often harassing demands of a rapidly growing practice. But he is always ready for a new case, a new lecture, or course of them, a new debate in the Academy, a new paper for a journal, a new chapter in a book. Dr. Bartholow is, in short, a type of a modern physician, and they who know him best have no doubt of his success wherever he may go or in whatever work he may engage.

PROF. BEDFORD may be congratulated upon the success of his efforts to establish a State Pharmaceutical Association at Utica, on the 21st inst. There is now no doubt that the Association will be able to embrace among its founders many capable representatives from every portion of the State. We have before remarked that the mercantile interests of the drug trade are just now in need of more attention from its members than its scientific relations; and we think most persons interested in pharmacy will be pleased to see some recognition of this fact in the new organization.

THE question raised in Congress last year respecting the propriety of abolishing the duty on quinia as a means for lessening its cost, has again been raised by the secular press in various parts of the country. Among others, the *Louisville Evening News and Post* and the *New York Daily Tribune* have published correspondence and leading articles on the subject, and in the latter journal communications from two of the leading manufacturers have appeared over their own names. It is not improbable that the subject will again come before Congress at an early day with even stronger efforts to repeal the duty now imposed on cinchona alkaloids, than was awakened by the "Wood Tariff Bill."

THE decision of the Commissioner of Internal Revenue in relation to the exemption of apothecaries from a special tax as rectifiers, on account of their keeping an apparatus for distilling such spirits as are necessary to the preparation of medicine, has been received with much interest and satisfaction, since it permits a very considerable saving, in many instances, of the expense attending certain processes of manufacture.

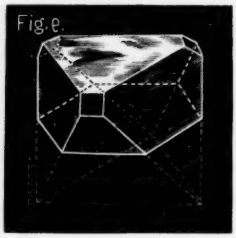
MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

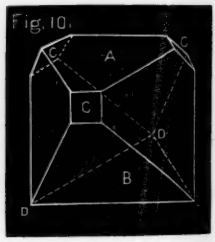
NOTES ON CRYSTALLIZATION.

BY J. U. LLOYD.

[Concluded from page 134.]

EXCEPTING the truncated apices of Figs. 6 and 7, the crystals represented by Figures 4, 6, and 7 of the May number were each, in reality, the upper half of a regular octohedron. Consequently, as already shown, the part of the crystals resting upon the dish are hexagonal, for, if a regular octohedron is bisected by a plane parallel to the horizontal faces, the surfaces formed by the bisecting line will each be a regular hexahedron. This is represented by Figure 9 of this number, in which the upper half of the cut represents the perspective view of a natural crystal as it rests within the dish. The faint dotted lines below show the figure that would have been presented if the dish had not interfered with the growth of the lower portion. This lower part is represented as the half of a





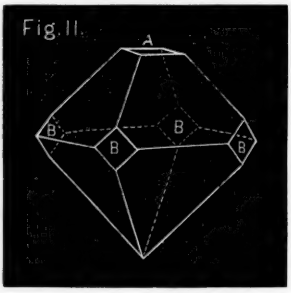
regular octohedron, instead of with truncated apices as above. This is to follow Nature, for the lower apices of a suspended crystal of ammonio-ferric alum are perfect.

We might reasonably expect that, in case a small, almost perfect crystal were suspended in the solution, it would increase regularly upon all the surfaces, as all are exposed to the solution, thus producing a large *perfect* crystal. In practice, however, even though the crystal be formed upon a fine thread and isolated from others during its growth, it will be imperfect. Each crystal will grow downward more rapidly, and the topmost apices will be truncated, more or less, as the growth of the lower part of the crystal exceeds that of the upper. If the crystal be turned from time to time, the truncated portions will reproduce the pyramidal form when downward, and the upper points will in turn become truncated by planes perpendicular to the axes cut. This is represented by the outline Fig. 10, in which case an isolated crystal was formed upon a silk thread and suspended from the centre of the surface A, thus presenting the plane surface B downward. The upper halves of the three axes (from the point of intersection)

are shortened and strike the centres of the square faces C, C, C, and thus we find the combination of the cube and regular octohedron. The lower halves of the axes terminate in the angles formed by the surfaces of the regular octohedron D, D, D, thus making this part of the crystal the half of a regular octohedron. Hence we find the entire crystal to be the combination of cube and regular octohedron, exactly like the ideal crystal, Figure 9, of which the lower half is theoretical.

We will now refer to Figure 11. The original of this outline was also formed upon a fine silk thread, and grown in position represented by the cut. The summit quickly presented the square face A, followed by a shortening of the horizontal axes, thus producing the squares B, B, B, B, the lower part of the crystal alone retaining the perfect form of a regular octohedron.

It will be noticed that the upper square face is larger than the four beneath. It is possible, by growing the crystal very rapidly, to entirely remove the faces B, B, B, B, and in such instances it will



be found that the face A decreases in size. As a rule, when the crystal grows rapidly, the tendency is to perfection of the fundamental form.

If by accident a part of a growing crystal be broken, in a short time the defect will be repaired, the deposition of matter progressing most rapidly if the defective portion be downward. A crystal may be even ground perfectly round, and a few hours' growth will reproduce the original form. If a fragment of any shape, from any part of a crystal, be immersed in the solution, Nature will produce from it in a short time the fundamental form. If by accident a nice crystal be broken to pieces, tie with a string the fragments together in natural position and immerse in the solution. The original crystal will encroach upon the strings, envelop them, and reproduce a crystal, every surface a plane, every edge straight. Care must be taken to occasionally remove any small crystals that may form upon the strings.

Use the knife freely when a small crystal becomes attached to that which is growing. Do not fear to blemish the large crystal, for holes may be dug into it at any place, and Nature will reconstruct the wounded part.

The study of artificial crystals, and the phenomena attending crystallization, are beautiful, interesting, and instructive. The study of distorted crystals is more interesting than that of the more perfect forms. By attention to the influences which control the growth of crystals, strange distortions may be produced. It is to be hoped that this article may interest others in the study of crystals, and lead to practical experiments upon the growth of crystalline bodies. We have only noticed the beginning of a line of experiments that may be based upon this one substance, which tends to assume the form of the regular octohedron. By due attention to the points we have mentioned, any can succeed. From this to the study of the cube the step is easy, but it must be remembered that various salts require different conditions for successful crystallization.

CINCINNATI, OHIO, April 28, 1879.

IN connection with the foregoing paper it may perhaps be of interest to quote the following short note by Charles W. Quin, contained in the *Chem. News* of March 14th:

"When I was a student I was much given to large crystal growing. My great difficulty was to guard against sudden rises in temperature, which generally had the effect of causing the growing crystals to be partially and unevenly redissolved. To retain an even temperature, after many experiments, I hit upon the plan of plunging the beaker containing the growing crystal into the house cistern, the temperature of the water in which, as I found by trial, never differed by more than 0.5° F. either way day or night. To prevent the solution from becoming exhausted too rapidly, I used to immerse in it to the depth of half an inch or so a crystal drainer containing a filter-paper half full of the salt to be crystallized, so that a constant stream of strong solution was continually descending on the growing crystal.

The Eucalyptus Globulus in Greifswald.—(MOSLER and GOEZE.) Notwithstanding the cold winds which prevail in Greifswald from its situation near the Baltic Sea, and the long winter which lasts from four to six months, the eucalyptus thrives out of doors for the remainder of the year and has been cultivated with a view to its influence upon malarial poison. The experiment of growing it in pots in the hospital wards as a means for improving the local air appears to have been quite successful and meets with much favor.—*Brit. Med. Jour.*

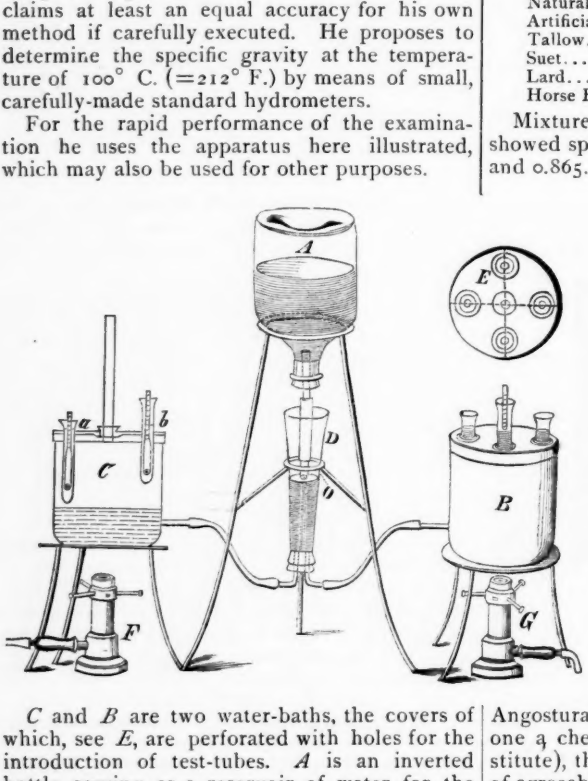
Artificial Cider, somewhat extensively made in the West, is said by the *Scientific American* to be composed of sugar, 1 lb.; tartaric acid, ½ oz.; good yeast, two tablespoonfuls; water, one gallon. Agitate to effect solution and allow it to ferment for 12 hours or more.

Lead in Iodide of Potassium.—(E. SCHERING.) Commercial iodine, such as is used for the manufacture of potassium iodide on the large scale, often contains lead. This contamination is very obnoxious, since iodide of lead is dissolved by iodide of potassium, and cannot be entirely separated from it, unless the latter is highly diluted. The crystals of iodide of potassium containing lead differ also in form from those of the pure salt.—*Ber. d. Deutsch. Chem. Ges.*, 1879, 156.

Apparatus for Determining the Specific Gravity of Fats.

Dr. E. Königs, of Crefeld, has sent a communication to the *Pharmaceutische Zeitung* (1879, No. 4), in which he advocates the determination of the specific gravity of the fats obtained from butter as a criterion of their orgin. He does not deny the accuracy, within certain limits, of Angell and Hehner's method based on the percentage of fats insoluble in water, but he claims at least an equal accuracy for his own method if carefully executed. He proposes to determine the specific gravity at the temperature of 100° C. (=212° F.) by means of small, carefully-made standard hydrometers.

For the rapid performance of the examination he uses the apparatus here illustrated, which may also be used for other purposes.



C and *B* are two water-baths, the covers of which, see *E*, are perforated with holes for the introduction of test-tubes. *A* is an inverted bottle serving as a reservoir of water, for the automatic supply of water to the water-baths. The bottle *A* is closed with a stopper, through which a glass tube passes, which reaches to about the centre of the elongated vessel *D*. This may be an ordinary lamp-chimney provided with a cork at the lower end, through which two glass-tubes pass which are connected with either water-bath. *O* represents the level of the water in the lamp-chimney. Whenever the level of the water in either water-bath falls, and with it of course the level at *O*, the orifice of the glass-tube descending from the bottle *A* becomes free, and in consequence of the entrance of air into the reservoir *A*, a corresponding quantity of water makes its way down which distributes itself to both water-baths.

When using the apparatus for determining the specific gravities of fats at 100° C., the water in both baths must be kept briskly boiling. For purposes of comparison, three test-tubes, containing, respectively, tallow, artificial butter, and natural butter of known origin are always examined in connection with each fresh sample of fat.

Dr. Königs found the specific gravities at 100° C. (=212° F.) of the following fats to be:

			Mostly.
Natural Butter	0.865	0.868	0.867
Artificial Butter	0.859		
Tallow	0.860		
Suet	0.860		
Lard	0.861		
Horse Fat	0.861		

Mixtures of natural butter with foreign fats showed specific gravities varying between 0.859 and 0.865.

Notes on Commercial Drugs and Chemicals.

(From the April Circular of Gehe & Co., Dresden.)

Aconite is very scarce, and several orders for the U. S. could only be partially filled.

Aconitine, in crystals, which has been out of market for some time, is now again offered.

Almonds.—Owing to a short harvest in France and Spain, and a diminished export of Barbary almonds, the price during the first months of this year has much advanced. *Sweet* Italian are about 25%, and *bitter* about 35% above the price of the preceding season. The stock in Italy is said to be very short.

Angostura Bark, which is in regular demand for the preparation of Angostura-bitters, is offered in two qualities: one a cheap quill-shaped sort (probably a substitute), the other, genuine, in more flat pieces of agreeable aromatic taste.

Arnica is one of the articles of which the demand for the American market is larger than the supply. Orders could often be filled only partially and at advanced prices.

Balsam of Peru.—Stocks in London, Hamburg, and New York have been low ; hence an advance of about 10% was unavoidable.

Balsam of Tolu is at present again produced more regularly, to judge from the increased supply and lower price.

Benzoin (gum) from Sumatra was more plentiful than during the preceding year. Siam benzoin, however, was very scarce, and every small consignment was immediately absorbed by chocolate manufacturers at exorbitant prices (£65 to 70 per cwt.)

Blatta Orientalis or Pulvis Tarakanæ (Rus-

sian cockroaches), the new remedy for dropsy, pleuritic effusion, pericarditis, etc., is in tolerably brisk demand. The apparently high price is owing to the fact that the roaches cannot be caught by poisoning with arsenic or other injurious substances.

Calabar Beans have been comparatively scarce, and as most of the stock was absorbed by the manufacturers of eserine, the price has risen to 3*s.* 6*d.* to 4*s.* per lb.

Caraway.—The very low price of some brands of oil of caraway has been traced to the fact that some manufacturers deprive the seed only partially of their oil, and afterwards dry and manipulate the residuary seeds. These are eagerly purchased by certain parties for unknown purposes, probably for adulterating fresh caraway seeds.

Cardamoms have had an upward tendency for some time, and stocks are low. Best Malabar fetch 9*s.* 6*d.* Aleppy 7*s.* 6*d.*, and Ceylon vary from 2*s.* 6*d.* to 4*s.* 6*d.* per pound.

Cera Mineralis.—Up to five years ago, the principal use of ozokerite—the mineral wax mined in Hungary—was for the manufacture of paraffin. Since then much the larger part was manufactured into the so-called *ceresin*, which is now universally used as a substitute for beeswax. Ozokerite yields from 50 to 70% of ceresin, of a melting point between 60° and 70° C. [According to reliable reports, the name ceresin is now applied to a mixture of refined ozokerite with carnauba wax. See below, page 174. Gehe & Co.'s report makes no allusion to this, but their ceresin appears to mean the unmixed refined product from ozokerite.]

Chrysophanic Acid has ceased to be in brisk demand since Liebermann has shown that the supposed acid extracted from Goa powder is not pure chrysophanic acid, but a compound called by him chrysarobin.

Cinchona.—Various causes combine to make lower prices for Peruvian bark improbable for the immediate future. Both France and America have received considerably larger supplies during 1878 than during the preceding year. New York imported in 1877 23,400 colli, in 1878 41,000 colli.

Cinchonia Muriate is in very active demand for the *East*, and has risen in price. [No doubt it is used by unscrupulous dealers as a fraudulent substitute for *sulphate of quinia*, which it very much resembles.]

Conchalagua, a Chilean herb resembling the European Centaurium minus, is in constant demand for Southern Europe.

Gold Chloride.—The light-yellow crystals are often slightly acid, and hence cause trouble to photographers. The latter should only use the *fused brown* chloride, which is always neutral.

Insect Powder (the flowers of Chrysanthemum and Pyrethrum).—The Dalmatian flowers have had an exciting market. While 100 kilos in 1877 brought only $47.57, the price in 1878 successively rose to $68.00 in summer, $73.00 in September, $95.00 in December, and in consequence of unlimited orders from America, reached in February, 1879, $145.00. Since then it has settled back to about $122.00.

Iva Moschata, an Alpine herb growing at high elevations and difficult to collect, is much used as an excellent bitter, and low in price.

Jaborandi is in brisk demand, but the supplies are short.

Lactic Acid has become cheaper. The demand for it has ceased entirely; only America and Russia consume it still in considerable quantities.

Licorice Root.—The Spanish sorts are well-known to contain more saccharine matter, but for pharmaceutical purposes the Russian is preferable, as the latter alone furnishes a yellow powder.

Magnesium Boro-citrate has continued to be a favorite remedy for incipient renal and vesical calculus.

Oil of Origanum is prepared by Gehe & Co., from the herb grown in Creta. It is much higher in price than the ordinary sorts, but is much preferable for pharmaceutical purposes.

Oleo-resin of Male Fern.—Gehe & Co. draw attention to the observations made by physicians, that oleo-resin of male fern, when exhibited alone in tape-worm, occasionally fails to operate; but that if mixed with liquid extract of Pomegranate-root bark it has never been known to fail.

Rhubarb.—Thoroughly sound Shansi rhubarb of reddish fracture has been very scarce. The great famine, the killing of camels and beasts of burden for food, have, among other things, contributed to this scarcity.

Sodium Nitrite has become an article of extensive production since it has begun to be used in the preparation of certain yellow colors. It may be had as a dry mass as well as in crystals.

Vaseline.—The consumption of this American product has largely increased. Prominent authorities have lately declared that it is an improper substitute for ointment, as it does not promote absorption from the skin (in fact, that it is not absorbed itself by the skin at all. See, however, below on page 180.) Others again have proposed that it should receive a place in the new German Pharmacopœia.

Anthelminthic Value of the Seeds of Cucurbita Maxima.

MR. J. LAKER MACMILLAN has a note on the above subject in the *Pharm. Journal*, Feb. 1st. He says:

It has previously been reported that the seeds of the *Cucurbita maxima* are common in use among the people of Northern Italy, for the expulsion of tape-worm; its advantage over other vermicides being that it seldom fails to bring

away the head, which the now officinal remedy *Filix-mas* often fails to do. Signor Vacchieri, of the Farmacia Internazionale (San Remo) has been good enough to send me a quantity of a confection which he prepares for the projector of the remedy, Dr. Bröking, and which he informs me has been used with success in some of the German hospitals.

Dr. Pearson Irvine, lecturer on forensic medicine at Charing Cross Hospital, and physician to the Victoria Hospital, has been good enough to put it to the test—in one case only as yet—the result, however, being as predicted and favorable to its future employment.

The worm was expelled entire a few hours after the administration of the remedy, and not piecemeal and wanting the head, as is often the case when *Filix-mas* is employed.

Signor Vacchieri says that this *Confectio seminum Cucurbitæ maximæ*, evidently a plasma of the powdered seeds, sugar, and mucilage, becomes inert after mould commences to form on it, and this I find takes place in the course of a few days, so that it is essential, if success be guaranteed, that it be freshly prepared before administration. I asked Signor Vacchieri for some seed with the view of attempting a permanent and less bulky preparation than this confection which is put up in pots containing, I should think, four ounces, one fourth of which is directed to be taken every ten minutes, starch diet during the day previous having been enforced. Dr. Irvine's patient, a boy of six years, took nearly two hours to consume three-fourths of this quantity, and could not finish the remainder; what he did consume had the desired effect, but the bulk of the dose is a decided objection. Signor Vacchieri did not favor me with the seeds, and as it is stated that those only grown at San Remo possess vermicide properties, those who wish to test their value will have to be content for the present with the confection which Signor Vacchieri offers to supply gratis for experiment, applicants paying carriage. Dr. Bröking pronounces the seed collected in other parts of Italy, even in places adjacent to San Remo, to be valueless. The remedy is harmless, agreeable to the taste, mildly cathartic, and produces no disagreeable sensations.

Coloring and Finishing Brass-Work.

To prevent the every-day rusting of brass goods, the trade has long resorted to means for protecting the surface from the action of the atmosphere, the first plan of which is to force a change to take place. Thus, if brass is left in damp sand, it acquires a beautiful brown color, which, when polished with a dry brush, remains permanent and requires no cleaning. It is also possible to impart a green and light coating of verdigris on the surface of the brass by means of dilute acids, allowed to dry spontaneously. The antique appearance thus given is very pleasing, and more or less permanent. But it is not always possible to wait for goods so long as such processes require, and hence more speedy methods became necessary, many of which had to be further protected by a coat of varnish. Before bronzing, however, all the requisite fitting is finished and the brass annealed, pickled in old or dilute nitric acid till the scales can be removed from the surface, scoured with sand and water, and dried. Bronzing is then performed according to the color desired; for although the word means a brown color, being taken from the Italian "*bronzino*," signifying burnt brown, yet in commercial language it includes all colors.

Browns of all shades are obtained by immersion in solutions of nitrate or the perchloride of iron; the strength of the solutions determining the depth of the color. Violets are produced by dipping in a solution of chloride of antimony. Chocolate is obtained by burning on the surface of the brass moist red oxide of iron, and polished with a very small quantity of black-lead.

Olive-green results from making the surface black by means of a solution of iron and arsenic in muriatic acid, polishing with a black-lead brush, and coating it, when warm, with a lacquer composed of one part lac-varnish, four of turmeric, and one of gamboge.

A steel-gray color is deposited on brass from a dilute boiling solution of chloride of arsenic; and a blue by careful treatment with strong hydrosulphite of soda.

Black is much used for optical brass-work, and is obtained by coating the brass with a solution of platinum, or with chloride of gold mixed with nitrate of tin. The Japanese bronze their brass by boiling it in a solution of sulphate of copper, alum, and verdigris.

Success in the art of bronzing greatly depends on circumstances, such as the temperature of the alloy or of the solution, the proportions of the metals used in forming the alloy, and the quality of the materials. The moment at which to withdraw the goods, the drying of them, and a hundred little items of care and manipulation, require attention which experience alone can impart.

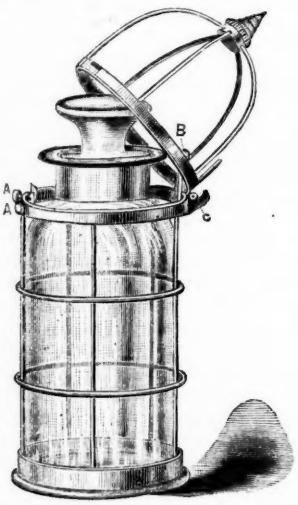
To avoid giving any artificial color to brass, and yet to preserve it from becoming tarnished, it is usual to cover properly cleaned brass with a varnish called "lacquer." To prepare the brass for this, the goods, after being annealed, pickled, scoured, and washed, as already explained, are either dipped for an instant in pure commercial nitrous acid, washed in clean water, and dried in sawdust, or immersed in a mixture of one part of nitric acid with four of water, till a white curd covers the surface, at which moment the goods are withdrawn, washed in clean water, and dried in sawdust. In the first case the brass will be bright; in the latter, a dead flat, which is usually relieved by burnishing the

prominent parts. Then the goods are dipped for an instant in commercial nitric acid, and well washed in water containing some argol (to preserve the color till lacquered), and dried in warm sawdust. So prepared, the goods are conveyed to the laquer-room, where they are heated on a hot plate and varnished.

The varnish used is one of spirit, consisting, in its simple form, of one ounce of shellac dissolved in one pint (imperial) of methylated spirits of wine. To this simple varnish are added such coloring substances as red sanders, dragon's-blood, and annatto, for imparting richness of color. To lower the tone of color, turmeric, gamboge, saffron, Cape aloes, and sandarac are used. The first group reddens, the second yellows the varnish, while a mixture of the two gives a pleasing orange.

A good pale lacquer consists of three parts of Cape aloes and one of tumeric to one of simple lac-varnish. A full yellow contains four of turmeric and one of annatto to one of lac-varnish. A gold lacquer, four of dragon's-blood and one of turmeric to one of lac-varnish. A red, thirty-two parts of annatto and eight of dragon's-blood to one of lac-varnish.

Lacquers suffer a chemical change by heat and light, and must, therefore, be kept in a cool place and in dark vessels. The pans in use are either of glass or earthenware, and the brushes of camel's-hair with no metal fittings.—*Ironmongers' Review.*



Greenwood's "Absolute Safeguard."

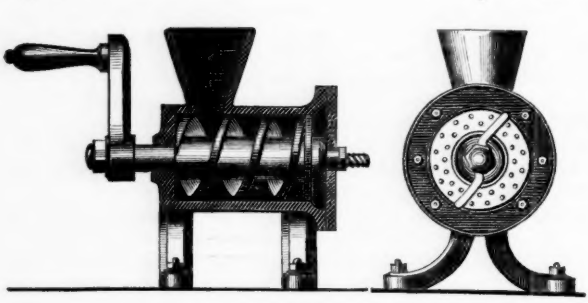
THIS is the name given by the inventor, Mr. Albert Greenwood, Jr., to a device which might perhaps have more expressively been styled "Poison-bottle Cage." Among the various contrivances which have so far been offered for attracting the special attention of the dispensing pharmacist to the dangerous contents of many of his preparations, there is *none* which strikes us to be equal to the one here figured and described. Of course, the locking up of poisons in a special poison cupboard is, under ordinary circumstances, a sufficiently effective safeguard. But this method is generally restricted to the storing of expensive and poisonous alkaloids and chemicals, rather than of pharmaceutical or other preparations, which are more frequently in demand and are therefore kept on open shelves behind the counter. Tincture of aconite, nux vomica, digitalis, fluid extract of belladonna root, colchicum root, tincture of opium, and many other preparations are usually kept in loose bottles in open shelves, and only exceptionally are they distinguished by some prominent mark or label. Accidents from mistaking one bottle for another on the part of careless dispensers are unfortunately not uncommon, even in cases where a poison-label or the word "poison" was attached to the bottle. Now, since it appears to be insufficient to attract the eye alone, and it was considered an additional safeguard to place an obstacle before the hands of the dispenser, which must be removed before the bottle can be taken up in the hand, the inventor devised the apparatus figured above. It consists of a nickel-plated round cage, made of various sizes, so as to fit different sizes of bottles, and provided with a hinged top, closing in front by a catch, which is released by pressure upon a button. A stop at the back of the frame prevents the top from bending back further than to permit the easy removal of a bottle. While there is, of course, no such thing as an *absolute safeguard* against carelessness on the part of a dispenser, yet, in our opinion, this contrivance comes nearer to it than anything else we know of. We have had a large experience in dispensing medicines, and are fully aware of the dangers incident to rapid dispensing, as is often necessary in cases of urgency, or where many persons are waiting for their medicines, both in private drug stores and in public dispensaries or hospitals. The greatest element of danger in these cases is the mechanical and blind grasping for bottles, the location of which is familiar to the hand.

This danger is hereby removed, and it must be a singular meeting of circumstances which would make an accident from this source probable. The inventor has applied for a patent, which will shortly be issued, and the apparatus will in a few weeks be for sale in the market, notice of which will be given by the inventor, who is associated with Mr. Williams (both of Maysville, Ky.), through the usual channels.

Arsenite of Quinia.

MR. OSCAR ADLER, who has successfully answered the prize query on arsenite of quinia propounded by the managers of a German en-

dowment fund,* recommends the preparation of this salt as follows: Dissolve arsenious acid in water with sufficient alkali to neutral reaction, add about 5 times its quantity of silver nitrate, wash the precipitated arsenite of silver, dry it, and then mix it with 3 times its weight of hydrochlorate (muriate) of quinia. Digest the mixture for 24 hours with 70% alcohol, at a gentle heat, filter, and allow the filtrate to evaporate spontaneously. The salt crystallizes in fine white needles; is soluble in 15 parts of cold and 6 parts of boiling alcohol, in 8 parts of chloroform, in 25 of ether, and in 20 of benzole, but is difficultly soluble in water, of which it requires 150 parts at the boiling point. All solutions have a faintly alkaline reaction. The crystals have a rhombic form, melt at 125–130° C. with loss of water, and after cooling appear as a yellowish gummy mass. On analysis the salt was found to have the composition: $3C_{20}H_{21}N_2O_2.AsO_3H_3O$.—*Pharm. Zeit.*



A New Poison-Pill Machine.

MR. E. TESCHNER, of Peterswaldau (Silesia), has obtained a German patent on a new apparatus for rapidly making pills containing poisonous ingredients, such as phosphorus for destroying rats, mice, etc. These poisons are very generally administered in form of pills, or rather short cylinders cut from a pill-mass, rolled out in the usual manner. By means of the apparatus here described, they may be prepared very rapidly.

As will be seen from an examination of the illustration, it consists of a cylinder containing a screw revolving on bearings: that near the crank being a central hole in the cylinder itself, while at the other end it revolves in the centre of a head screwed upon the cylinder, and perforated with 120 holes, each of three millimetres diameter, as Figure 2 illustrates. The prepared pill-mass is introduced into the funnel, whence it falls down into the cylinder, and is pushed forward towards the head by turning the crank. After it has passed the stationary plate inside of the head, it is pushed into the funnel-shaped compartment beyond it, and is finally forced out through the holes in the head, while at the same time two revolving knife-blades (see Fig. 2) cut off the cylindridal pills at the proper moment. With twenty revolutions a minute, the machine is capable of turning out thirty-three pounds of pills per hour.—*Pharm. Zeit.*, No. 25.

* The "Hagen-Bucholz'sche Stiftung."

SOME CONSTITUENTS OF PLANTS.

BY HENRY B. PARSONS.

THE student who desires to analyze vegetable substances will be able to do so more understandingly if he has a good general idea of the properties, solubilities, and distinctive reactions of the compounds which make up the living plant: he should know also in what part of the plant, and at what period in its growth, the different constituents are most likely to be found.

This article is submitted more as a suggestion to the student than a thorough exposition of the subject; it is hoped that it may stimulate some to begin work upon a most fascinating and intellectually profitable branch of chemical analysis—the systematic examination of plants.

The following are some of the more common and necessary constituents of plants.

I. *Moisture.*

Fresh plants seldom contain less than thirty or forty per cent of water, and in many fruits and vegetables the amount exceeds ninety or even ninety-five per cent.

Fresh leaves, herbs, roots, and barks generally lose from sixty to eighty per cent when dried. Plants, severed from all supplies of nourishment and exposed to the air, soon become *air dry*, in which condition they usually contain from five to twenty per cent of moisture; the amount varies greatly in the same sample according to the heat and humidity of the air to which it is exposed.

II. *Ash.*

All plants, when burned, leave more or less ash. The amount is least and most constant in seeds and wood; most in leaves and twigs, in which its quantity and character vary greatly with soil, season, and maturity.

The plant ash always contains potassium, calcium, magnesium, iron in traces, and combined sulphuric acid; usually it also contains traces or more of sodium, manganese, and combined hydrochloric acid; very often there are large amounts of combined phosphoric acid, and of silica, free or combined. In rare instances, traces of lithium and cæsium are found.

In the plant, part, at least, of the bases are combined with organic acids; these salts, when burned, are converted into carbonates of the alkalies or alkaline earths. If silica is present and too high a heat has been allowed, the carbonates and chlorines will be changed to silicates, and

the liberated acids will be volatilized. Iron and manganese exist as oxides in the ash.

III. *Woody Fibre.*

This gives form and strength to the various parts of the plant. It occurs in least amount in fruits, leaves, tubers, and bulbs; most in twigs, roots, barks, stem, pith, and wood. When pure, it is called cellulose, and has the same per centage composition, represented by the formula $C_6H_{10}O_5$, as starch, dextrin, and gums. In the plant it seems to be formed, indirectly through glucose ($C_6H_{12}O_6$), from starch.

IV. *Albuminoids.*

These are nitrogenous substances, containing also carbon, hydrogen, oxygen, sulphur, and possibly phosphorus, to which chemists have, as yet, been unable to assign any satisfactory formulæ. They all contain very nearly sixteen per cent of nitrogen, and are estimated, in absence of other nitrogenous bodies, from the total amount of nitrogen found in the plant.

V. *Starch.*

Starch consists of round, oval, or angular grains of different diameters in different plants. The individual grains consist of an envelope of cellulose, and an inner portion of pure starch. On the microscopical properties of starches see NEW REMEDIES, 1878, pp. 72 and 140.

Starch is most abundant in mature seeds and tubers, frequently found in roots and barks, usually in small amounts in stems and leaves, in which it may be entirely absent at certain seasons.

In the growing plant, starch seems to be changed to glucose, which can again be transformed into starch, or into the closely allied substances dextrin and cellulose. In the roots of many plants of the order Compositæ, starch is replaced by inulin ($C_6H_{10}O_5$), a substance having the same percentage composition as starch.

"It differs from starch in being deposited unchanged from its solution in boiling water when the liquor cools, and in giving a yellowish instead of a blue color with iodine." (U. S. Disp.) So, also, in some mosses, starch is replaced by lichenin, a substance soluble in hot water.

Probably all plants contain starch or some substance having very similar properties and physiological uses.

Starch is best detected by treating the powdered substance with a drop of iodine solution; if this be done on a glass slide while under the microscope, the smallest quantity may be found. Starch is insoluble in cold water, alcohol, ether, and other neutral solvents. Heat transforms it into soluble starch and dextrin, which are soluble in water. Hot dilute acids gradually convert starch into dextro-glucose ($C_6H_{12}O_6.H_2O$). Hot dilute alkalies dissolve it with formation of various products.

Starch may be estimated by converting it into glucose by boiling with dilute sulphuric acid and estimating the glucose formed as directed in NEW REMEDIES, April, 1879, p. 125. The amount of anhydrous glucose found multiplied by .90 will equal the amount of starch estimated.

VI. *Sugars.*

There are many varieties of sugar found in plants; they usually agree in composition with glucose ($C_6H_{12}O_6$), or with cane sugar ($C_{12}H_{22}O_{11}$). Sometimes, however, there are found other substances which have the sweet taste and many solubilities and reactions in common with the true sugars; these are usually given names which serve to show their sources, and sometimes their chemical classification. True sugars contain twice as many atoms of hydrogen as of oxygen; they are soluble in water, nearly insoluble in absolute alcohol, moderately soluble in eighty per cent alcohol, and insoluble in ether, chloroform, benzole, and carbon disulphide.

Cane sugar is found in the root of the sugar-beet; in the stems of the sugar cane, sorghum, corn stalks, and millet; in ripened fruits and flowers; in the sap of trees; most abundantly in early spring. In leaves it is present in small amounts, or may be entirely absent.

VII. *Gums, Dextrin, and Pectous Substances.*

Most gums seem to be excretory products, formed by transformation of cellulose. They are regarded as potassium and calcium salts of weak, amorphous organic acids, of the composition $C_6H_{10}O_5$. Gums are soluble in water, nearly insoluble in absolute and eighty per cent alcohol, more soluble in proof spirits, insoluble in methylic alcohol (separation from dextrin). Most gums are not precipitated by acetate of lead, but are by subacetate of lead (a distinction from dextrin), and ammoniacal acetate of lead (as dextrine). The term mucilage is here used to designate those kinds of gum which, like gum tragacanth, merely swell when treated with water, but do not form true solutions.

Of very similar properties are the jelly-forming (pectous) substances found in fruits when nearly or quite ripe. For fuller details consult text-books.

Of the substances here named, dextrin is most quickly and perfectly changed to glucose by the action of hot dilute acids.

VIII. *Tannin.*

Nearly all plants contain a small amount, at least, of some organic acid very similar in properties to true tannic acid: that is, it is freely soluble in water and eighty per cent alcohol, moderately soluble in absolute alcohol and acetic ether, and practically insoluble in stronger ether, chloroform, benzole, and carbon disulphide.

Also, like tannic acids, it gives blue-black, green, or brown colors with ferric salts, and characteristic precipitates with acetates of lead and copper, ammoniacal acetate of zinc, and

cinchonia sulphate. It may, or may not, precipitate solutions of gelatin and tartar emetic, and sometimes its taste is but slightly astringent.

Until they shall be more thoroughly investigated it is best to class such acids as tannin, being especially careful to give full particulars as to solubilities and reactions.

The true tannic acids are also widely distributed; they occur abundantly in barks, as oak and hemlock; in some seed pods, as in the "Algarobillo" (Balsamocarpon brevifolium of South America); in roots, as in the Texas plant, a Rumex commonly known as "Cañaigre;" in leaves, as of sumach (Rhus coriaria); in most unripe fruits, from which it disappears as the fruit ripens, as in the famous persimmon; in fact, tannic acid may be expected in almost any part of any plant. Less frequently gallic acid occurs, with tannic acid or alone.

IX. *Bitter Substances.*

Bitter substances are quite widely diffused and may occur in any part of the plant. For convenience they may be classified as:

1. *Alkaloids.*

Nitrogenous organic bases capable of forming definite salts with mineral acids. See NEW REMEDIES, May, 1879, p. 153.

2. *Glucosides.*

Organic compounds, not nitrogenous, nor capable of forming true salts with acids. When decomposed by boiling with dilute mineral acids, or by fermentation, they are split into two or more compounds, one of which is glucose.

Most glucosides have a bitter taste and neutral reaction; many of them are precipitated by alkaloid reagents. They differ greatly in solubilities and physical condition, some being crystalline, some amorphous, some colored, and others white.

3. *Indifferent Substances.*

Not nitrogenous or glucosides, of neutral reaction and very various composition, solubilities, and reactions. There are also some indifferent substances which have no bitter taste.

X. *Organic Acids.*

Nearly all plants contain organic acids, other than tannic, in small amounts; these acids may exist free, or in combination with alkaloids or with some of the inorganic bases of the ash. Oxalic acid is often found; in good rhubarb it can be plainly seen as calcium oxalate crystals, by the aid of a low-power microscope. The most common acids in fruits are citric, in lemons, limes, oranges, cranberries; tartaric, in grapes; and malic in apples, pears, etc. Of these three, any two, not all, may occur in the same fruit; they may or may not be accompanied by oxalic acid.

There are many other acids of less common occurrence; their properties and importance must be determined by the analyst.

XI. *Resins and Wax.*

Resins are solids or semi-solids, fusible, insoluble in water, soluble in alcohol, some also soluble in ether and other neutral solvents; some soluble in alkaline hydrates, others insoluble; usually of acid reaction to litmus, of various colors, tasteless or acrid.

In many cases they result from the oxidation of volatile oils They are most abundant in wood, bark, and leaves; some plants are known to contain three distinct resins which have different fusing points and solubilities.

Of quite similar properties is *wax*, which is a fusible solid, usually white, which separates on cooling a hot alcoholic extract from some plants. Wax is most abundant upon the surface of glossy stems and leaves.

XII. *Oils.*

1. *Fixed Oils* are thick liquids, or semi-solids, of various colors and neutral reaction, when pure. They are soluble in ether and carbon disulphide, but insoluble in water and in alcohol, with a very few exceptions. They are most abundant in seeds.

2. *Volatile Oils* are light liquids, white, yellowish, or greenish, of neutral reaction when perfectly fresh, slightly soluble in water, freely in alcohol and ether. They have distinctive pungent odors, and are most abundant in some barks, flowers, and leaves. They form at most a very small part of the whole plant.

XIII. *Coloring Substances.*

Chlorophyll gives the green color to leaves. It is soluble in ether, alcohol, chloroform, and benzole, but insoluble in water. Acetic acid precipitates, and animal charcoal absorbs it, from a cold alcoholic solution.

There are innumerable other color substances, yellow, red, and brown found in the woody parts of plants. Their properties are diverse, and can only be described in connection with the plants themselves.

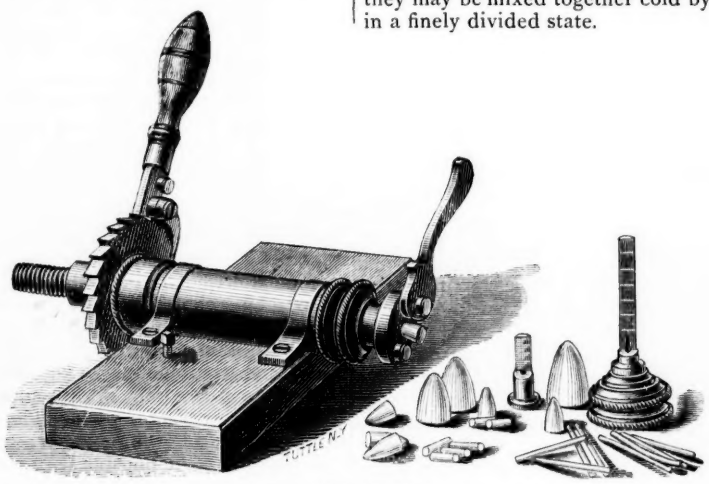
The above thirteen classes comprise the more common and essential constituents of plants. There are some substances which are intermediate in properties, and may be assigned to different classes by different investigators; there are other substances of such negative properties that they cannot be assigned to any class but that of "extractive matters," a class, by the way, which includes nearly all mixtures which various analysts have been unable to separate into their component parts.

In this connection it will be seen of how great value are good works on physiological botany; the student who has access to the works of Gray and Sachs will be amply repaid for time devoted to their study. The Pharmacographia of Flückiger and Hanbury, the three dispensatories published in this country, and later works on materia medica are valuable books of reference where medicinal plants are the subjects for study.

Knowlson's Suppository Machine.

THE description given on page 134 of our May number, of Archibald's Suppository Machine, has served to bring to our notice another apparatus invented by Mr. A. M. Knowlson, of Troy, in this State, which was patented some time since,* but which has not, to our knowledge, been illustrated in a pharmaceutical journal. It has been used by a few manufacturers of suppositories, and we understand that it has been proved to be very efficient, but its high price ($100) has, no doubt, prevented its adoption by dispensing pharmacists, although we can see no reason why its sale at a lower price should not prove quite remunerative.

It consists essentially of a cylinder of metal, similar to the barrel of a syringe, with a piston, on the rod of which is a screw passing through a nut which is operated by means of a lever.



Suppository Machine.

The moulds attached to the cylinder are adapted to the size and shape of the suppository to be made. In the illustration, the moulds for cylindrical forms are shown as being detached from the cylinder and standing on end. The ingredients of the suppositories being well mixed and introduced into the cylinder are subjected to pressure by means of the piston and are forced out at the nozzle along a rest which projects below it and on which is a series of gauge marks to facilitate division into proper lengths.

In order to form conical suppositories, an attachment is provided, as shown in the cut, affixed to the cylinder. To understand this attachment well, a sectional drawing should be provided, but it may be described as follows: the cap which is screwed on to the cylinder has a flaring orifice shaped like the suppository to be formed. This opening is closed by a cut-off which is attached to the face of the cap by an eccentric pivot, and is here shown as raised to permit the escape of a suppository already formed. The opening being closed by the cut-off, the piston is screwed down until the pressure on the suppository mass causes it to fill the mould, the cut-off being then raised and the pressure on the piston continued, the suppository is forced out by the advancing mass, and when it has been sufficiently protruded to be beyond the edge of the mould, the cut-off is shut down and acts like a shear blade to separate the suppository from its attachment. These manœuvres are again repeated until the contents of the cylinder are exhausted. Like the Archibald method, it is not necessary to melt the cacao-butter in order to mix it with the ingredients, but they may be mixed together cold by having them in a finely divided state.

* Patent No. 79,840, dated July 14th, 1868.

On Kauri Resin.*

THE name kauri is applied to several species of *Dammara* occurring in Oceania, and yielding resins that are more or less used. Besides *D. Australis*, which yields the white Dammar resin, may be instanced the *D. ovata* C. Moore, *D. Cookii* R. Br., and *D. lanceolata* Lindl., of New Caledonia, and the *D. Brownii* of Queensland. The greater part of the dammar of commerce comes, however, from *D. Australis*.

At certain seasons of the year, there exudes from the lower parts of the trunk of this plant, either spontaneously or assisted by incisions, a yellowish-white liquid of good consistence, which is very viscous, and gives off a pleasant odor of turpentine. This liquid hardens gradually, forming a product the color of which varies from

* Extract from a paper by Dr. Julius Morel on "The Turpentines and Resinous Products of the Coniferæ," in *Pharm. Journ. and Trans.*, March 1st, 1879.

milky white to pale-yellow, or even dark-brown, thus resembling amber in color and transparency. Very often it is used by the maoris as a masticatory, although the resin from *D. Australis* has no action either as a stimulant or as a narcotic.

Recent kauri resin is not esteemed in commerce, and only that is exported which is obtained at a distance varying from a few inches to a few feet below the surface of the soil in localities now entirely devoid of trees, being the product of trees destroyed by fire in previous years, or such as has accumulated in the soil at the foot of existing trees as the result of the runnings of many successive years. It is in North Auckland that the greater part of this resin is met with.

It is not rare to meet with blocks of kauri resin weighing upwards of 50 kilograms. Julius Wiesner reports in his work* that, at the Paris Exhibition in 1867, a block of kauri resin was exhibited by Messrs. Clark & Co., an English firm of varnish makers, which was a metre long and 40 to 50 centimetres deep and wide.

Hochstetter first pointed out that when kauri resin first runs from the tree, it is soft, milky, opaque, and has an opaline appearance; it is under this form that it is used as a masticatory by the New Zealanders.

In commerce, kauri resin occurs in large pieces. The fossil resin is usually pale-yellow or greenish-yellow, presenting sometimes an opaline lustre; that of inferior quality is of a more or less dirty-brown color. The outside surface is covered with a crust resembling a whitish efflorescence, varying in thickness from that of paper to an inch.

Julius Wiesner examined specimens from New Caledonia, and found that some, in which the interior portion was thin and whitish, were brownish or even blackish on the outer surface, presenting here and there a metallic aspect. The outer surface is very irregularly indented at the part where the crust separates clearly from the resinous mass. Upon the surface of fracture may be noticed dentate and undulated edges; but frequently separation between the crust and the resin is not clear, and then description of the surface is not possible.

Kauri resin has a balsamic odor, which is very pronounced and characteristic in pieces recently broken or that have been preserved in a well-closed bottle. Its taste is aromatic and pleasant; when chewed, it is rather adherent to the teeth. It readily melts and dissolves in boiling alcohol and in oil of turpentine. In sulphuric acid it dissolves with a red color. The specific gravity of the New Zealand kauri is from 1.062 to 1.109, and that of the New Caledonian is 1.119.

Kauri resin is used for nearly the same purposes as white dammar, namely, the preparation of varnish and lacs, and might perhaps also be used, like dammar, as an ingredient in sticking plasters. The New Zealanders utilize the property it possesses of diffusing a dense thick smoke, which is condensed, and then constitutes the black pigment used by the Maoris in tattooing. It is also used in the preparation of varnishes, which appear capable of rivalling those having copal as a base. For several years the cotton manufacturers have used it to give a gloss to calicoes and other fabrics. About 1865, an attempt was made in London to manufacture candles from it. It is also used to varnish buckets, and, mixed with tar, to cover palisades. Lastly, kauri resin, having the property of softening when heated, is used in the preparation of ornaments which resemble amber very well, the resin being softened in moulds.

* Die technisch-verwendeten Gummiarten, Harze und Balsame, p. 162.

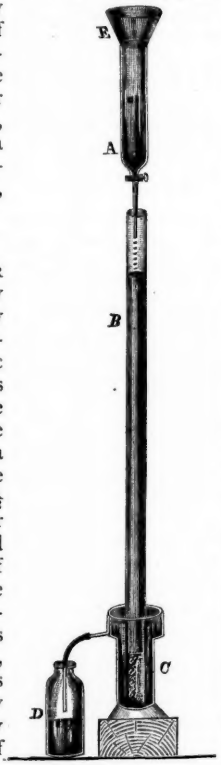
Analysis of Phosphide of Zinc.

THE composition of the phosphide of zinc, which has been in use as a remedy for several years, is generally accepted to be P_2Zn_3; but, as is well known, there is hardly any pure sample of it in the market, and in view of the difficulty of preparing it, absolute purity can hardly be expected. It becomes of interest, therefore, to be able to ascertain the percentage of pure P_2Zn_3 in any given sample.

Mr. Ernest Baudrimont appears to have discovered a method which permits a rapid and tolerably correct assay of the compound. This method is based on the following facts: 1. On treating zinc phosphide with acids, no hypophosphite is formed, but all the phosphorus is disengaged as phosphuretted hydrogen (PH_3). 2. This latter gas is completly absorbed by a solution of copper sulphate, while any uncombined hydrogen is unaffected by it. The assay is conducted in the following manner:

A portion of the phosphide of zinc is reduced to a fine powder, 0.5853 gm. of this are weighed, wrapped in a small piece of cigarette paper, and the small package, after being rolled between the fingers, inserted into a test-tube, filled with mercury and standing in the mercury bath upside down, that is, arranged as for the collection of gases over mercury. Care must be taken that no air-bubbles are inclosed with the package. By means of a curved pipette, 10 cc. of tolerably concentrated hydrochloric acid are then injected into the test-tube from below. As soon as the acid has reached the phosphide of zinc, phophuretted hydrogen is given off from every particle of Zn_2P_2 present, and the column of mercury is proportionately depressed. After 5 or 6 hours the reaction will be terminated, which is shown by the level of mercury being no longer depressed, and the volume of gas is now read off. By means of another curved pipette, 15 to 20 cc. of a rather concentrated solution of cupric sulphate are now injected, and the tube is agitated so as to cause the gas to come in thorough contact

with the last-named solution. The latter rapidly absorbs all the phosphuretted hydrogen without affecting the uncombined hydrogen which may be present, and which was generated by the acid acting upon pieces of metallic zinc contained in the original sample. If no gas remains after shaking, the phosphide of zinc was pure; otherwise the salt was contaminated with metallic zinc. In the latter case, the volume of the residuary free hydrogen is deducted from the total volume of gas originally obtained, and the difference calculated as phosphuretted hydrogen. Now 200 cc. of phosphuretted hydrogen (sp. gr. 1.185) are produced by the decomposition of 1.1706 gm. of pure phosphide of zinc; hence the proportion of the latter salt in the given sample, may be determined by a simple calculation.—*Jour. de Ph. et Chim.*, 1 .



Purification of Mercury.

PROF. LOTHAR MEYER purifies mercury by means of a moderately dilute solution of commercial crystallized ferric chloride, in the apparatus shown in the cut. The mercury flows from the stoppered tube *A* in a very fine stream into the tube *B*, which is 3 to 4½ feet long, of a diameter of about 1¼ inches, and is filled with a solution of ferric chloride. The tube stands in a vessel *C*, containing mercury. This vessel must be at least $\frac{1}{12}$, or better $\frac{1}{10}$ as high as the tube *B*, so that it may contain sufficient mercury to balance the column of ferric chloride solution. The cylindrical vessel *C* is provided with a lateral tube. If the mercury which is to be purified is very impure, it is first filtered through a filter, perforated with a pinhole, into the tube *A*. From there it is allowed to fall in very fine drops into the solution of ferric chloride, and after traversing the latter, arrives at the bottom in minute drops, which do not at once coalesce, as they are covered by a thin coat of chloride or subchloride. But the pressure of the succeeding globules forces them gradually below the edge of the tube *B* into the cylindrical vessel *C*, whereby at the same time the thin incrustation of the globules is left behind, so that only pure brilliant mercury flows over into the receptacle *D*. Occasionally it may be necessary to repeat the operation.*—*Ber. d. Deutsch. Chem. Ges.*, 1879, 437.

Preparation of Imitation Kumys.

FILL into a strong champagne-bottle good, fresh, unboiled cow's milk to such a height that after the addition of 30 grams (1 oz.) of granulated or powdered sugar, and after corking, there would still be left at least an inch of empty space below the cork. Before corking, add a piece of fresh compressed yeast, about the size of two peas, then cork and tie the cork firmly down. In place of compressed yeast, a teaspoonful of good beer-yeast may be taken. The contents of the bottle are well shaken, repeatedly, then the bottles are placed in the cellar, where they are turned up and down a few times during the day. From and after the fifth day the mixture is ready, and may be drunk to about the twentieth day. It is best to prepare about six bottles full at a time, refilling each after it has been emptied and cleaned, so that the treatment, after being begun, may not be interrupted. On opening the bottles, the contents are very apt to foam over, hence the bottle should be opened while being held over a plate. It should never be opened where there may be any furniture or dresses about, which might be soiled by spattering.

A good milk-wine or kumys should have a homogeneous appearance, of the consistence of thin cream, should be effervescent when poured out, of an acidulous, agreeably vinous odor and taste, and should not be full of lumps, or taste like butter-milk.

On first using kumys it produces loose bowels, but this effect soon passes off.—*Pharm. Zeit.*, No. 25.

A New Swivel-Faucet.

A PATENT has recently been granted in Germany to the inventor of a new quadruple faucet, which permits rapid filling of bottles, without necessitating the turning of a stop-cock. As will be seen from the figures (1 being a front and 2 being a side view), it consists of a shank with screw-thread, is provided with two lateral knobs which serve as levers in screwing it in or out, and carries a revolvable head bearing four equidistant nozzles. As long as the latter are in the position shown in Fig. 1, the orifice of the faucet, which is below, is closed; but as soon as the swivel is turned in any other position, liquid will run through the nozzle passing over the orifice. A pin or bolt, when turned upwards as in Fig. 1, allows free motion to the swivel, but prevents it from being revolved when turned downwards, as in Fig. 2. When the faucet has

* Another method of purifying mercury by means of chromic acid will be described in our next number. A solution of this acid could also be substituted for the iron solution in the above-described apparatus.

been inserted into the cask, the workman sits down before it, having at his side a large supply of bottles. He places a bottle over one of the lower nozzles (Fig. 1), and immediately turns the faucet so that the nozzle points downward, and hence permits the liquid to pass. While one bottle is being filled, he grasps an empty bottle with his other hand and pushes it over the next nozzle. As soon as the first bottle is filled, a lateral movement brings down the second and

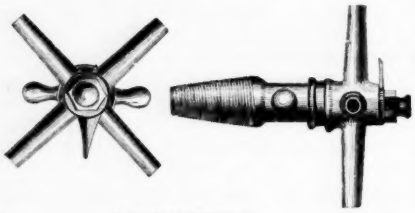


FIG. 1. New Swivel-Faucet. FIG. 2.

releases the first bottle. These faucets are at present made particularly for filling wine into bottles; and they may be purchased at the office of *Die Weinlaube*,* for 7 fl. 50 kr. = $3.40.

On the Adulteration of Beeswax.

DR. MAX BUCHNER, of Graz, again calls attention to the very common practice of adulterating beeswax with foreign substances, particularly *ceresin*. This latter substance is not the pure fossil wax, or ozokerite, as is often stated, but it is a mixture of refined fossil wax with carnauba † wax, which latter imparts to the former its necessary degree of hardness. The mixture may be produced of a white color, like bleached wax, or, if it is to be yellow, it is specially dyed. To discover the presence of ceresin in wax, the specific gravity of the sample may be taken, which will be found lower than in the case of pure wax. The specific gravities of yellow and bleached wax have by various authorities been given differently; the lowest figure is 0.940, the highest, 0.970. Dr. Buchner finds for yellow beeswax. 0.959, for bleached, 0.955. He also determined the specific gravities of different species of ceresin, etc., and found the following figures:

Yellow ceresin fr. Stockerau	0.876
White " " "	0.898
Yellow hard ceresin fr. Frankfort on Oder	0.901
White hard " " "	0.891
White soft " " "	0.883
Yellowish (uncolored) ceresin fr. Graz	0.886
White ceresin fr. Graz	0.859
White " " "	0.858
Half-refined fossil wax, brown	0.888
Yellow beeswax, genuine	0.959
White " "	0.955
Adulterated yellow wax, fr. Croatia.	0.937

These figures show that the addition of ceresin undoubtedly lowers the specific gravity of wax.

The author also describes an improved process for ascertaining the presence of ceresin in beeswax. First determine the spec. gravity of the sample, which may be done roughly by placing a piece into alcohol of the spec. gr. 0.945, (to 0.950). Genuine wax must sink to the bottom, while wax containing ceresin will float. If this impurity is suspected to be present, boil a sample of the wax with concentrated alcoholic solution of potassa (1 part potassium hydrate, and 2½ to 3 parts of 90% alcohol) for a few minutes in a wide test-tube, and allow it to stand, for some time after boiling, in the water-bath, to prevent the contents from solidifying. If the wax was pure, the solution remains limpid, if ceresin was present, there will be found floating on top of the potassa solution (which at the same time will be more or less deeply colored) an oily layer, which may even be distinguished, after solidifying, from the saponified lower layer. The complete separation of the two layers often requires some time, so that the experiment must not be interrupted too soon. It may be hastened by the addition of a few drops of alcohol and renewed heating in the water-bath.—*Dingler's Polyt. Jour.*, vol. 231, p. 272.

The Production of Thalleioquin in Dilute Solutions of Quinine.

MR. S. R. CHALLICE communicates to the *Pharm. Journ.* the following method of obtaining the thalleioquin* reaction from dilute solutions of quinine:

Having experienced some difficulty in obtaining the green coloration in very dilute solutions of quinine by the ordinary process with chlorine and ammonia (in consequence, perhaps, of the chlorine not being freshly prepared), I have made several experiments with the following solution with very good results, and as it can be prepared without any trouble, I think it will be of some service to students who have not the time and necessary appliances at hand to prepare the solution of chlorine.

Put half an ounce of solution of chlorinated soda into a ten-ounce stoppered bottle, add sixty minims of diluted hydrochloric acid and allow it to stand half an hour, then pour in half an ounce of water and agitate for a few minutes, when it will be ready for use.

To sixty drops of this solution, mixed with two drachms of a solution containing one grain of quinine in forty ounces of water, add one

* Published at Klosterneuburg near Vienna.

† On the Carnauba-wax Palm and its products see NEW REMEDIES, 1877, pp. 259–260, where the tree is illustrated.

* Thalleioquin, or Thalleiochin, or Quinia-Green, $C_{21}H_{23}N_2O_5$, is obtained as a precipitate chiefly from a solution of quinia or quinia sulphate in chlorine water on addition of ammonia. It is a resinous body, insoluble in water and ether, soluble in alcohol and glycerin. Its alcoholic solution, diluted with water, dyes silk, wool, and cotton (the latter only if previously mordaunted with albumen) a green color.

drop of strong solution of ammonia, when a decided green coloration will be gradually produced, and also the red color upon adding solution of ferrocyanide of potassium between the chlorine and ammonia.

In applying this test, the chlorine and quinine should be agitated for several seconds before adding the ammonia, as the color is not developed if the ammonia is added immediately after the chlorine. After dropping in the ammonia, the solution should not be shaken until a decided color appears at the upper portion of the liquid. If it is then agitated, the color gradually deepens on standing for a few minutes.—*Pharm. Journal*, March 8th, 1879.

New Experiments with Duboisia.

DR. FIEDLER, of Dresden, has instituted extensive experiments in the medical department of the city hospital, on the effects and properties of duboisia or duboisine, the alkaloid of pituri.* The result of the investigations so far made is thus summarized by Dr. Hirsch, who conducted them under the direction of Dr. Fiedler:

The usually employed dose is 1 to 1½ milligrams hypodermically or in pills. The hypodermic employment sometimes produces inflammation, not followed, however, by abscess. Given internally, its effects are just as rapid as by the hypodermic method, but the symptoms of intoxication, which are on the whole identical with those produced by atropia, are less violent. The alkaloid duboisine, or rather its sulphate, was administered frequently (in 55 cases) to relieve the profuse sweating of consumptives, and in *every case* successfully. In many cases a dose of 1 milligram ($\frac{1}{64}$ grain), repeated on three consecutive evenings, and in all others a dose of 1½ milligrams ($\frac{1}{45}$ grain) was sufficient to suppress the night-sweats entirely for 8 to 10 days, and in some cases even longer. The narcotic effects of the alkaloid, which are very decided, are likewise of very great benefit to the sick.

A female suffering from delirium tremens, in whom a dose of 0.03 gm. (ab. ½ grain) of muriate of morphia produced only a two hours' sleep, fell into a deep sleep, lasting seven hours, after a dose of 1½ milligrams of duboisia sulphate. This alkaloid dilates the pupil very energetically and paralyzes the accommodation. In about 80 cases a solution of the alkaloidal salt (1 in 1,000) was dropped on the conjunctiva without producing irritation or conjunctivitis. It immediately dilates a pupil contracted by pilocarpine, and it also suppresses within five minutes the profuse secretion of saliva and perspiration caused by the latter alkaloid. It is, hence, an antidote against pilocarpine, at least to a certain extent.—From *Gehe & Co.'s* April Circular, p. 72.

* See our May number, p. 130.

Serrin's Carboy-Tilter.

THIS consists of two segments of curved flat iron, which are strengthened by a set of spokes, so that each resembles a part of an irregular wheel. They are joined to a board, upon which the carboy is to be placed. The two segments are further secured laterally by a cross of flat iron, against which the carboy is made to lean. In front, or rather over the carboy, another crosspiece is then fastened, which prevents the carboy from sliding off when the apparatus is tilted over. Our carboys differ from those used in Europe. The European carboys are mostly cylindrical flasks packed in baskets; ours are globular flasks packed in square boxes. It would, therefore, be easy to adapt the principle

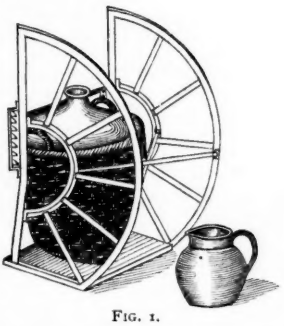


FIG. 1.

FIG. 2.

of Serrin's apparatus to our carboys. It may be obtained from Peltier, jeune of Paris,* for 32 francs.—*Dingler's Pol. Journ.*, 231–2, p. 107.

The Determination of Specific Gravities.

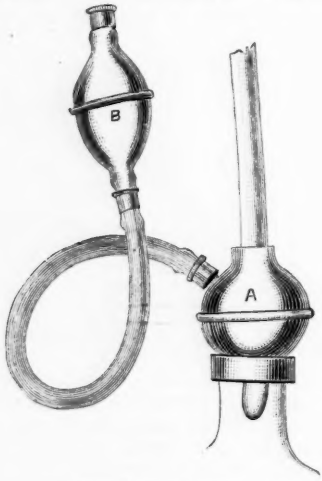
A METHOD for determining specific gravities, which is particularly useful when only small quantities of liquid are available, is thus described by Mr. S. P. Peckham in the *Chemical News*:

Having occasion some years ago to take the specific gravity of some small quantities of distillates from petroleum distillates, I was led to adopt the following method, which was found to be entirely successful with so small a quantity as 3 cubic centimetres.

I prepared a cube of aluminium, which was intended to be of 1 cc., but was accidentally obtained smaller. This was suspended by a platinum wire of the smallest size, and weighing only a few milligrams. The wire was first weighed and then attached to the cube, which was weighed in air, and then weighed just immersed in distilled water, and then in the oil. The dif-

* No. 10 Rue Fontaine-au-Roi.

ference between the weight in the air and in water, gave the weight of the water; the difference between the weight in air and weight in oil, gave weight of the oil. The weight of the oil divided by that of the water, gave the specific gravity of the oil. This method admits of perfect control of the volume of the liquids compared, and of just as perfect control of the temperatures as any other method. Moreover, it admits of very rapid execution, and of operating upon very small quantities of liquid. For taking the specific gravity of all ordinary oils, and other non-corrosive liquids, a cube of aluminium would be superior to a cube of platinum, on account of its lower specific gravity, and its permanence in the air renders it superior to any other of the so-called base metals. For the class of liquids named I have found the results obtained by this method more satisfactory than those obtained by the bottle, when the quantity available



Storrs' Siphon Exhaust.

was unlimited; I therefore recommend the method without hesitation as applicable to very small quantities of liquid, as reliable, and as incomparably more rapid of execution than any other method with which I am acquainted.

It has often been my custom, when ascertaining specific gravities for purposes of comparison, to cool the oils to zero centigrade. This temperature is very easily obtained by immersing the vessel in fragments of ice, placed in a funnel from which the melted ice-water can readily flow away. It may not be generally known that water in which pieces of melting ice are floating will rarely cool a vessel to zero, usually not below two degrees. If a tripod holding the funnel is placed over the balance-pan, and a funnel is selected with a long neck, bent nearly at a right angle, the water from the melting ice may be discharged into a beaker to one side, while the vessel, holding only a few cc. of liquid, is cooled completely to zero with the least possible trouble.

For purposes of comparison this arrangement furnishes results often of great value in technical operations in which rapidity of execution is of more importance than that fastidious regard for accuracy which cannot be overestimated in questions relating to the absolute "constants of nature."—*Chem. News*, March 7th, 1879.

Storr's Siphon Exhaust.

THE "Storr's siphon exhaust," made by the Goodyear Rubber Company, of New York, is the simplest and cheapest apparatus for starting the flow of fluids through a siphon that we have yet seen, and there can now be no good reason for resorting to the clumsy, wasteful, and often dangerous method of tipping carboys, tanks, or casks to empty them of their contents. The adjoining illustration shows the essential features of the apparatus, which consists of an ordinary syringe-bulb and valve B connecting, by means of an India-rubber tube, with an India-rubber ball A. The latter has two openings for the passage of a lead or India-rubber tube. The upper of these openings should be closely filled by the tube, but the lower one must be sufficiently loose to admit the passage of air. It is operated by placing the ball A on the end of the long limb of the siphon, inserting the short limb into the vessel to be emptied, and then placing the nozzle into the neck of a bottle as here shown. By pressing the ball A firmly against the neck of a bottle, a tight joint is formed, and it only remains to exhaust the air in the bottle and siphon by working the bulb B. It will be noticed that the point where the fluid is discharged from the siphon is much below the suction apparatus, which thus escapes all contamination, and this admits of its being used for fluids of any character.

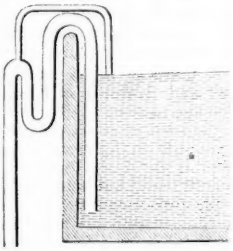
To stop the flow, the point of discharge needs to be raised above the level of the fluid in the vessel being emptied, when the flow is reversed and the siphon is emptied.

Preparation of Crayons of Sulphate of Copper.

MR. W. WEBER describes in the *Archiv der Pharmacie* (Feb., 1879, p. 160) a very simple and ingenious method for making pencils of sulphate of copper, which might perhaps also answer for alum and other substances. Instead of attempting, as some direct, to fuse the sulphate in its water of crystallization, which succeeds only with very large quantities, and then but partially, he directs the preparation first of anhydrous sulphate of copper, by allowing the commercial crystals to effloresce in a warm place, then to transfer the nearly dry salt to a capsule, and to heat this over an alcohol lamp until every trace of water is driven off. The pulverulent salt thereby loses its bulkiness, and on stirring collapses to a heavy, almost white powder, which

is admirably adapted for making handsome pencils. Good blotting paper is wrapped 3 or 4 times around a lead pencil or glass rod of the thickness the crayons are intended to be, the lower end is twisted together, and the upper edge of the paper held together by a little resin. It is not advisable to paste the whole lateral edge of the blotting paper, because the crayons would subsequently absorb unequal quantities of water and curve to one side. The dry sulphate is now introduced into the form, or mould, and made to settle by repeated taps of the mould on the table. It must not be pressed in, as this is apt to result in differences in packing at various points of the crayon, which result in fracture after solidification. The topmost layer only is somewhat pressed down, and the paper-mould closed by twisting. The filled mould is now rolled very carefully, so as not to break it, in a correspondingly large piece of old linen (or muslin) which was previously saturated with water and wrung out. The dehydrated sulphate of copper absorbs the water through the filtering paper with great avidity, and thereby becomes hard and solid. The moulds are allowed to remain in the damp cloth for 3 or 4 hours, or over night, at the end of which time the salt will have re-absorbed all its water of crystallization. The crayons are now removed, and in case they have become too soft, are allowed to lie in a warm place until they have lost the excess of moisture. They may then be cut in pieces and pointed with a knife.

Automatic Siphon.



DR. WILLIAM TAYLOR, in the *Photographic News*, describes an apparatus designed to serve as an over-flow pipe to tanks or other vessels not already fitted with means to that end, and without in any way altering these vessels. It is especially applicable to tanks with a fluctuating supply of water, but in which the water must be maintained at a constant level. As its name implies, it is self-acting, and while at once carrying off any sudden influx of water, it will not bring the level below a certain fixed line. The excess of water is carried from the bottom of the tank. Into the tank is passed the waste-pipe, of a diameter greater than the feed to the tank. This waste-wipe is bent into the form shown, with the shoulder about half an inch lower than the level of water required in the tank. In the upper surface of this shoulder, a small hole is made over which a small tube is fixed. This small tube is then led over the side of the tank to the constant level required.

When this waste-pipe is put into action as a siphon, it rapidly carries off the water to the level. When it reaches this, air is admitted by the small pipe through its lower extremity, and the waste-pipe ceases to be a perfect siphon. If, now, a small stream of water flows into the tank, the same quantity passes through the partial siphon, but should a rush of water into the tank take place, bringing the water above the proper level, the waste-pipe is at once converted into a true siphon and rapidly brings the level back again.

In the sketch, the pipes have been drawn projecting from the sides of the tank, but of course, in practice, these pipes are laid close to the side of the tank.

RECENT PAPERS.

On Indian Aconite.—DR. M. DUNIN V. WASOWICZ has examined the constituents of *Aconitum heterophyllum* Wallich, or Indian aconite, chiefly with a view of settling the question regarding the composition of the alkaloid atisine which Broughton found therein. He ascertained the constituents to be a fat, a peculiar kind of tannin, cane-sugar, pectin, mucilage, aconitic acid, starch, and the alkaloid atisine, the formula of which was found to agree with that given by Broughton. There is probably a second alkaloid present. Atisine was administered to animals and found to be not poisonous.—*Arch. d. Pharm.*, March, p. 193.

Lactic and Butyric Acids from the Washwater of Starch.—(DR. GEO. THENIUS.) On evaporating the water from which the starch has been deposited in wheat starch factories, 100 parts of this water yield 1.04% of a thick brownish extract of strong odor. During evaporation, insoluble nitrogenous bodies separate, which must be removed by filtration. 100 parts of this extract contain 87.1% of lactic acid. This lactic acid may be used either for the preparation of ferrous lactate, or for the manufacture of butyric acid. The former product is used in medicine, the latter in the manufacture of butyric ether and rum-essence. A very good method of making *butyric ether* is the following: Mix 40 gm. blood fibrin, 60 gm. crude lactic acid, 160 gm. starch, 10 gm. tartaric acid, and 2 to 3 litres of water; allow to stand forty-eight hours in a warm place, at about 104 to 113° F. As soon as butyric acid has been formed, add 260 gm. of powdered chalk, and allow to stand for five or six weeks, repeatedly stirring At the end of this time the mass will have become more fluid and clear. When no more gas-bubbles are given off, the calcium butyrate which is formed is converted into sodium butyrate by the addition of sodium carbonate. The precipitated calcium carbonate having been filtered off, the filtrate is evaporated and the residue decomposed by sulphuric acid. Impure-dark colored butyric acid then separates, which is again neutralized; the salt is decomposed by sulphuric acid in a retort and the butyric acid distilled over. By mixing and warming 2 parts of butyric, 1 part of sulphuric acid, and 2 parts of alcohol, we obtain butyric ether which, after the addition of water, swims as an oily layer on top. It is washed with water, mixed with a little chalk, dehydrated with calcium chloride, and finally distilled.—*Neueste Erfind. und Erfahr.*, 1879, p. 180.

Oil of Gaultheria Punctata.—(H. KÖHLER.) This is a clear, rather thick oil, of brownish-yellow color, and possessing the well-known odor of wintergreen in a higher degree than the latter. It is indifferent towards polarized light, and boils at 223° C. It was found to consist of methyl salicylate.

Oil of Gaultheria Leucocarpa.—(H. KÖHLER.) This oil yielded the same results as the preceding.—*Ber. d. Deutsch. Chem. Ges.*, 1879, 246.

Solvents of Cinchonia.—(M. PRUNIER.) In view of the great discrepancy of the statements made by different authorities relative to the solubility of cinchonia in various solvents, the author has made a new series of investigations, and has found that 1 part of pure crystallized cinchonia is soluble in:

84.28 parts of 95 per cent alcohol,
101.62 parts of pure chloroform,
108.00 parts of amylic alcohol.

By mixing these solvents, it is possible to obtain a menstruum which dissolves much more cinchonia than any of them will dissolve singly. The mixture which has the greatest solvent power consists of:

4 parts of pure chloroform, and
1 part of 95 per cent alcohol,

of which 13.47 parts dissolve 1 part of cinchonia.—*Journ. de Ph. et Chem.*, 1879, 135.

Assay of Cinchona Bark.—(M. PRUNIER.) This is partly based upon the preceding facts. The author directs the assay to be made as follows:

Powder 10 grm. of slaked lime, mix it with 30 grm. of water, and incorporate with the mixture 20 grm. of cinchona bark in moderately fine-powder. Dry the mixture by exposure to air or in a hot chamber. When dry, transfer the powdered mass into a narrow percolator (an adapter), provided at its outlet with a tampon of cotton, and cover the powder with a disc of muslin kept in place by a piece of lead or other heavy substance. Then exhaust the mixture with 150 parts of chloroform to which ¼ of its weight of alcohol of 95 per cent has been added. The last portions of the menstruum are displaced by water, until a drop or two of the latter are visible on the surface of the percolate. The latter is distilled in the water-bath to dryness. The residue is taken up by a sufficient quantity of dilute hydrochloric acid (10 of acid, 90 of water), the solution filtered, the filter washed, and the filtrate precipitated by ammonia. The whole of the alkaloids are thus obtained but slightly colored. They are placed on a filter, washed with dilute ammonia (10 per cent), dried and weighed. The quinia is then separated by ether, and the balance, if required, subjected to further processes of separation.

According to Oppermann, the hydrochloric solution of the alkaloids may be precipitated by bicarbonate of sodium in presence of tartaric acid. Quinia then remains in solution.—*Journ. de Ph. et Chem.*, 1879, 138.

Bromhydrate of Conia.—The name of the author, whose paper we have given an abstract of, on page 18 of our January number, is *Tirgalkian*, and not Tyryakian.

Nitrite of Amyl.—(DR. WM. H. GREEN.) The author states that a very fair yield of nitrite of amyl may be obtained by the action of potassium nitrite and sulphuric acid on amylic alcohol having a boiling point between 128 and 132° C. The potassium nitrite may be easily made by maintaining potassium nitrate for some time at a dull red heat. It is then heated with amylic alcohol in a flask on a water-bath, and sulphuric acid, diluted with its volume of water, gradually added. Nitrite of amyl distils over regularly with some vapor of water. After washing the product with a solution of potassium carbonate, and drying it with solid potassium carbonate, it is distilled, and all that passes below 100° C. may be retained. Perfectly pure nitrite of amyl boils at 96° C.—*Am. Jour. Pharm.*

"Kerite," a kind of artificial caoutchouc, is the invention of Mr. Day, of New York, and is made as follows: to produce 100 parts by weight of kerite, 27 parts of cotton oil and 30 parts of oil-tar are heated together in a cauldron for several hours, at a temperature of about 150° C. After this has been done, 30 parts of linseed oil, 12 parts of sulphur, and 5 of ordinary wax or of solid paraffin are added. The whole is then heated for five or six hours, at a temperature under 150° C., to prevent carbonization. It is then allowed to cool, and is moulded into blocks convenient for future purposes. The price is about one-third of the natural caoutchouc. Mr. Day received honorable mention for kerite insulated telegraph core, exhibited at the Paris Exhibition.

The Discovery of Gold in India.—A Reuter's telegram, dated Bombay, November 19th, says that Sir Andrew Clarke, Public Works member of the Viceregal Council, visited Wynaad last February, and having from his Australian experiences judged the country highly auriferous, he, with the sanction of the Viceroy, visited Mr. Brough Smyth, the eminent mining engineer of Victoria, who brought to India some practised miners for the purpose of exploring and testing the quartz reefs. Mr. Smyth has already discovered, in an area of 25 miles by 13, 90 outcrops of one reef, with a thickness of 2 or 4 feet, yielding from a few pennyweights to 200 ounces per ton. The richer stone shows, when broken, the fine and coarse gold, with jagged pieces as large as peas. In some reefs there is much stone practically unproductive, but they have yielded variously from 8, 10, and 14 pennyweights to 2 and 4 ounces per ton. It is believed that with capital and good management a very large industry may be insured. Wynaad is a small district in the Madras Presidency. The climate is healthy and pleasant for Europeans nine months of the year, but somewhat feverish during the other three months. It is, however, considered improbable that there will be any "rush" of diggers to the Madras Presidency, as, it is stated, Europeans cannot stand hard physical labor in India. Europeans will, however, no doubt supervise and instruct native workmen. The nature of the work to be done renders any mere spade and pick work useless. The surface washing is as thoroughly worked out as is Ballarat; and to do anything with reefs requires the capital necessary to put up expensive crushing machinery. There is, no doubt, a good field for skill and capital, and money can, and no doubt will, be made in the district.—*Brit. Trade Jour.*

Valerianate of Zinc in Hemorrhoids.—(C. DRADWICK, M.D.) The author has noticed the fact that in a considerable number of patients troubled with hemorrhoids who were taking valerianate of zinc for other troubles the hemorrhoids have, with few exceptions, been relieved.

A Case of Epilepsy Successfully Treated by Ergot and Bromide of Sodium.—(J. K. BAUDUY, M.D.) Female, aged 18, subject to epilepsy since 12 years of age, in the form of attacks of *grand mal* at monthly intervals, increasing in frequency and intensity after puberty. A formula identical with that known as "Brown-Séquard's," but having sodium substituted for the potassium salt, was used, containing a dose of twenty grains thrice daily, accompanied with half a drachm of Squibb's fluid extract of ergot. The medicine was continued for eighteen months and the attacks ceased after the first four months. At the end of three years and ten months there had been no return of the disease.—*St. Louis Courier of Med.*

Unusual Effects of Atropia.—(F. C. HOLTZ, M.D.) Pure atropia, as ordinarily used in dilute solution as a mydriatic, causes no pain or disturbance in the eye. Dr. Holtz says that the presence of free acid, sediment, or any other impurity causes unpleasant symptoms, and this may be used as a test of the alkaloid used, since disturbance is rarely caused when it is pure. Certain patients are extremely sensitive to aconite and suffer from smarting, heat, redness of conjunctiva, and flow of tears each time that atropia is used. Dr. Holtz also relates an instance in which a single drop of the atropia solution placed in the eye developed constitutional symptoms, and another in which the same effect was prevented by the addition of a small amount of morphia to the solution.—*Chicago Med. Journ. and Exam.*

A New Reaction for Kreatinin.—(TH. WEYL.) 1,500 cc. of normal human urine contain on an average 1 gramme kreatinin. The author has discovered a method

to show its presence in as small a quantity as 5 cc. of such a urine, or by weight of 0.0033 gm. kreatinin. The test is the following: Add to a few cubic cm. of freshly voided, cooled urine a few drops of a very dilute aqueous solution of sodium nitroprusside (which has barely still a brown-red tint), then add by drops dilute soda-solution; the liquid will assume a fine ruby-red color which lasts only a short time, when it changes to an intense yellow, caused by the action of soda upon the nitroprusside. Elevation of temperature, and presence of more than traces of alcohol interferes with the reaction.—*Ber. d. Deutch. Chem. Ges.*, 1878, 2175.

Active Principles of Alstonia.—(O. HESSE). According to the author, the alstonine of F. v. Müller and Rummel—see our March number, p. 84—is a mixture of chlorogenine and porphyrine. The bark of Alstonia scholaris (dita bark) contains two alkaloids: echitamine and ditamine, which are not identical, as Harnack asserts.—*Ber. d. D. Chem. Ges.*, 1878, 2234.

The Chemical Cause of the Poisonousness of Arsenic.—The peculiar action of arsenic, when taken internally, has heretofore been explained by supposing that it combines with the albumen of living organs, and thereby unfits them to perform their functions. Prof. Binz, of Bonn, however, calls attention to the fact that arsenic or its oxides does not enter into combination with albumen outside of the body. Besides, he, in conjunction with Dr. H. Schulz, have just concluded a series of investigations which have shown that arsenious acid is oxidized to arsenic acid, and the latter immediately again de-oxidized in the lymphatic organs, at the temperature of the living body. Hence there occurs in the living tissues a rapid exchange of nascent oxygen, which causes a destruction of the organs unless interrupted. It appears to act like nitrogen dioxide in the manufacture of sulphuric acid, where this body acts as the carrier of oxygen, being oxidized to nitrogen tetroxide, and yielding its oxygen to sulphurous acid. It is probable that upon this property of producing a rapid evolution of oxygen depends the remedial action of arsenious acid.—*Pharm. Zeit.*, No. 26.

Anda and Oil of Anda-Seed.—*Anda Brasiliensis* Radde (*Anda Gomesii* Juss., *Johannesia princeps* Velloz) is a tree indigenous to Brazil, belonging to the nat. fam. of Euphorbiaceæ, the bark of which, when incised, exudes a milky juice used for poisoning or stupefying fish. The fruit of the tree is over three inches in diameter, containing seeds of the size of a chestnut, which have a pleasant almond-like taste and contain a fixed oil, which is a cathartic and sometimes also acts as an emetic. One or two are sufficient to produce copious evacuation. In Brazil, they have been used from ancient times for this purpose, generally triturated with sugar, cinnamon, and anise. The fixed oil, obtained by expression, has a pale-yellow color, is transparent, and almost tasteless. It is also used for anointing wounds. Dr. Norris has tried it in the Pennsylvania Hospital, and regards it as a prompt purgative in doses of 50 minims.—*Restaur. Farmacéutico.*

The fixed oil of Anda has extraordinary drying properties, more so than even boiled linseed oil. The tree and the fruit are called in Brazil: Andaaçú, Indayuçú, Fructa da Arara, Purga de Gentio. Da Silva Manso gives the dose of the oil as one-half scruple.*—ED. N. R.

Determination of Manganese, Cobalt, Nickel, and Zinc, and their Separation from Iron in Form of Oxalates.—A. CLASSEN found that the oxalates of manganese, cobalt, nickel, and zinc are completely insoluble in strong acetic acid. These metals may therefore be determined and separated as oxalates, by adding to the concentrated and neutral solution of any of their salts a solution of one part of neutral potassium oxalate in six parts of water, and then strong acetic acid. If the solutions of the salts were acid, they must first be neutralized with soda and then acidified with oxalic acid. The precipitates are made dense by warming the vessel in a water-bath, and washed on a filter with concentrated acetic acid, or a mixture of the latter with alcohol and water. After drying, the precipitate is ignited, and thereby converted into oxide. Ferrous salts likewise yield a precipitate under the same condition; not so, however, solutions of ferric salts which remain entirely unaffected. If the above metals are to be separated from iron, the latter must be present entirely as ferric salt.—*Zeitsch. d. Oest. Ap. V.* from *Ber. d. Deutsch. Chem. G.*

This process can also be adopted for a separation of *ferrous* from *ferric* salts.—ED. N. R.

Crystallization of Phosphorus.—MR. GEO. WHEWELL has found the following to be the best plan for producing crystals of phosphorus: Take a piece of glass tubing (or a test-tube) and seal one end; place at the bottom of the tube a piece of phosphorus about the size of two peas; draw out the other end; then heat the tube commencing about one inch or so above the phosphorus, so as to drive out as much air as possible; then seal the open end (or cork the test-tube and make it air-tight). Melt the phosphorus, and spread it as thinly and evenly over the sides of the tube as possible. Allow to stand for a week or two, or place into a freezing mixture, when crystals will form in a few days.—*Chem. News*, April 4th.

Trimethylamine.—This substance, which may be regarded as ammonia (NH_3) in which all the hydrogen has been replaced by methyl (CH_3) = $N(CH_3)_3$, is now obtained in large quantities during the utilization of the beetroot residues. The hydrochlorate of trimethylamine yielded is usually contaminated by small quantities of chloride of iron and hydrochlorate of ammonia. This can be removed by decomposing with soda and collecting the gas in pure hydrochloric acid, removing from the solution a slight crystallization of hydrochlorate of ammonia that forms, and treating the mother liquor with soda. The pure trimethylamine thus obtained boils between 9° and 10° C., and has a density at zero of 0.673. On bringing such trimethylamine kept in the liquid state by low temperature into contact with carbon bisulphide, a violent reaction takes place, and a new crystalline body is formed. This substance can also be prepared more readily by passing a current of gaseous trimethylamine into a mixture of carbon bisulphide and alcohol; the alcohol dissolves it as formed, and afterwards yields it on evaporation in fine white acicular crystals. The new compound is a sulphocarbamate of trimethylamine, resulting from the union of one equivalent of trimethylamine with one of carbon bisulphide, $N(CH_3)_3 + CS_2 = N(CH_3)_3CS_2$. It melts at 125°, but decomposes at the ordinary temperature. It is soluble in dilute alcohol and chloroform, but nearly insoluble in absolute alcohol, carbon bisulphide, ether, benzol, and with difficulty in water. The compound has been studied and other of its properties by M. Blennard. (*Comptes Rendus*, lxxxvii., 1,040).—*Pharm. Journ. and Trans.*, Jan. 25th.

The Purity of Commercial Sulphate of Quinia.—(C. SCHACHT.) In our last number, page 140, we gave an abstract of the results obtained by the author in examining a series of German brands of quinia sulphate by Hesse's method. The author has since then examined some foreign brands, namely:

1. Solfato di Chinina basico, of the Societa Farmaceutica Romana, a product of the Milan Quinine Factory. Tested in the quinometer (see May number, p. 139), it showed immediately after shaking, in the ethereal layer, a mass of granular crystals. Hence it must have contained, according to Hesse, at least 3% of sulph. of cinchonidia and homocinchonidia. It contained, on an average, 13.28% of water.

2. Sulphate de Quinine de Pelletier, Delondre et Levaillaint, made by Armet de Lisle et Co., successeurs, of Paris. This yielded granular crystals, in the ethereal layer, after two hours; consequently it contained more than 1% of the above-named foreign alkaloids. It contained on an average 15.54% of water.

* In: *Enumeração das Substancias Brazileiras, que podem promover a catarze.* Por A. L. P. da Silva Manso. 8vo, Rio de Janeiro, 1836, p. 8.

3. Sulphate of quinine prepared by Howards & Sons (late Howards & Kent), Stratford, London. This yielded *no* crystals, even after two hours, and was as pure as that of Jobst previously reported on. It contained on an average 15.32% of water.—*Pharm. Zeit.*, No. 30.

An Experiment in Opium-Smoking.—N. von Miklucko Maclay states in *Natuurkundige Tijdschrift van Nederlandsch Indië* (VII., 2, p. 2,438) that, during his stay at Hong Kong, he tested on himself the effects of opium. The results were, at his desire, observed by a competent person.

The experiment was made at the Chinese Club, where every convenience for smoking opium is to be found. Dr. Clouth, of Hong Kong, took the necessary observations, and his notes are recorded below. These may be summarized as follows:—Herr Maclay was in normal health, and had fasted eighteen hours before commencing the experiment. He had never smoked tobacco. Twenty-seven pipes, equivalent to 107 grains of the opium used by the Chinese, were smoked in two and three-quarter hours, at tolerably regular intervals. The third removed the feeling of hunger caused by his long fast, and his pulse rose from 72 to 80. The fourth and fifth caused slight heaviness and desire for sleep, but there was no hesitation in giving correct answers, though he could not guide himself about the room. After the seventh pipe the pulse fell to 70. The twelfth pipe was followed by singing in the ears, and after the thirteenth he laughed heartily, though without any cause that he can remember. Questions asked at this time were answered only after a pause, and not always correctly. He had for some time ceased to be conscious of his actions. After the twenty-fifth pipe, questions asked in a loud tone were not answered. After the last pipe had been smoked he remarked, "I do not hear well." Forty minutes later there was a slight return of consciousness, and he said, "I am quite bewildered. May I smoke some more? Is the man with the pipe gone already?" Fifteen minutes later (4.55 P.M.) he was able to go home, and then retired to bed. He woke the next morning at 3 A.M. and made a hearty meal, after his fast of thirty-three hours. During the next day he felt as if he had bees in a great hollow in his head, as well as a slight headache.

The organs of locomotion were first affected, next came sight and hearing, but Herr Maclay is very positive that there were no dreams, hallucinations, or visions of any sort whatever.—*Chem. and Drug.*, March, p. 102.

Preparation of Protiodide of Mercury.—MR. P. YVON has proposed the following method, as a wet process, for the preparation of pure protiodide of mercury: Dissolve 25 grams of crystallized protonitrate (mercurous nitrate) in 60 grams of pure glycerin, dilute with 300 grams of water, and filter. Then pour *into* this solution another containing 16.6 grams of iodide of potassium in 50 grams of distilled water. Allow the precipitate to settle, wash by frequent decantation, then place on a filter and continue washing until a drop of the filtrate ceases to leave a residue when evaporated from platinum foil. The product is of a fine yellowish-green color. The solution of iodide of potassium must be poured, slowly and under constant stirring, into that of the mercurous nitrate, and not the latter into the former.* The solution of iodide of potassium must not be alkaline, and should it be so, must be made neutral or very faintly acid by means of acetic acid.—*Journ. de Ph. et de Chem.*, 1879, 244.

Essential Oil of Eucalyptus Globulus.—(O. HARDUNG.) The author had to supply a demand for genuine oil of *Eucalyptus Globulus*, for which purpose he applied directly to the distillers in Melbourne, Australia. He ascertained from various sources that nearly all the essential oil of Eucalyptus which is offered in Europe is derived from *Eucalyptus amygdalina*, which is much richer than other species in essential oil, and the product of which can be sold at a comparatively low price. *Eucalyptus Globulus* is a native of the Province of Victoria, but grows in out-of-the-way districts, such as Cape Otway; this circumstance, as well as the fact that 1 cwt. of its leaves yield only about 6 oz. of essential oil, have induced the distillers to substitute the leaves of *E. amygdalina*, which is much more abundant, and much richer in oil. The essential oils of both these species are very similar, but that of *E. Globulus* is supposed to be therapeutically better.

Eucalyptol is prepared *only* from the essential oil of *E. Globulus*.—*Pharm. Zeit.*, 29.

Oat-Bran contains a Substance having the Flavor of Vanilla.—EUGENE SERULLAS has found that by extracting oat-bran—a by-product obtained in making groats—a substance is obtained which at first is odorless, but if subjected, while in aqueous solution, to the action of oxidizing substances, is converted into a body having the odor of vanilla. This may be extracted by means of ether and further purified.—*Pharm. Zeit.*, No. 29, fr. *Mon. Scient.*

Vaseline a Solvent of Iodine.—G. SELLE, apothecary in Kosten (Prussia), draws the attention of physicians and pharmacists to the undoubted advantages of vaseline as a body for various ointments, and defends it against the attacks of various writers of authority, who have raised objections against it. Among other things it has been stated that vaseline is not only not absorbed by the skin, but that it also prevents the absorption of remedies which are mixed with it. The author found that 20 parts of vaseline dissolve 1 part of iodine. A small quantity of this solution (0.5 gm.) was rubbed into the lower arm night and morning. The urine collected during the 36 hours succeeding the first inunction showed the usual reactions for iodine, proving thereby that the latter had been absorbed.

The solution of iodine (1 part) in vaseline (20 parts) is soluble in cod-liver oil and other oils, in every proportion [? Ed. N. R.], and may even be mixed with extract of malt. The internal administration of vaseline appears to be entirely harmless, as no report of any injury caused by it has so far been published.—*Pharm, Zeit.*, No. 22.

Complete Separation of Albumen from Animal Fluids. (F. HOFMEISTER.)—It is well known that boiling alone will not coagulate and precipitate all the albumen which may be present in animal fluids. But it may be completely separated by the following process:

The greater portion of albumen is first separated from the liquid by the ordinary means, namely, boiling the slightly acid liquid. The filtrate is then boiled for a few minutes with lead hydrate, freshly precipitated lead carbonate, oxide, or zinc oxide, and again filtered. The second filtrate is entirely free from albumen. The albumen is precipitated in the form of a metallic compound. If the liquid contains considerable quantities of phosphates or sulphates, the addition of a little lead acetate, previous to boiling with lead hydrate, is necessary, in order to prevent the formation of free alkali, which would transform small quantities of albumen into soluble alkaline albuminate. It is further shown by the author that animal liquids which give no precipitates with potassium ferrocyanide and acetic acid, or with the alkaloid reagents, viz., tungstophosphoric acid, potassium-mercuric iodide, potassium-bismuth iodide, and tannic acid, are entirely free from albumen and peptones. If, on the other hand, a precipitate is produced by an alkaloid reagent, but not by potassium ferrocyanide and acetic acid, the presence of peptone-like bodies is rendered exceedingly probable.—*Journ. Chem. Soc.*, fr. *Chem. Centralb.*, 1878, 635.

Solvents of Iodoform.—DR. VULPIUS, of Heidelberg, points out that the usual statements regarding the solubility of iodoform in alcohol and ether are incorrect. One of the most usual solvents of iodoform is collodion. According to the text of the German Pharm., one would

* Any protiodide of mercury (mercurous iodide) formed, would be converted, in presence of free and undecomposed iodide of potassium, into metallic mercury and biniodide of mercury (mercuric iodide).

suppose that iodoform would require for solution twenty parts of ether (and, therefore, nearly the same amount of collodion). This is, however, not the case; but one part of iodoform, previously moistened and shaken with a little ether, is already soluble in nine parts of collodion. If desired, even a fifteen-per-cent solution may be prepared.

Absolute alcohol dissolves four per cent of iodoform, which, for many purposes, is a sufficiently strong solution.

Iodoform is also soluble in fats and oils. Olive oil dissolves, at the temperature of boiling water, about twenty per cent, and when cold retains about two per cent.—*Pharm. Zeit.*

Purification of Honey.—Referring to the method proposed by Julius Mueller, and quoted on page 49 our February number, which consists in treating honey with a specially prepared alumina, it should be added that, if the honey has an acid reaction, this might cause the solution of some of the alumina, and thereby contaminate the syrup. This may, however, be entirely avoided by adding at the same time a little magnesium carbonate mixed with water. The honey obtained by this process is clear as crystal.—*Pharm. Zeit.*, No. 10.

Separation of the Alkaline Earths from the Alkalies.—E. PFEIFFER proposes the following improved method for separating the alkalies from barium, strontium, calcium, and magnesium. A weighed quantity of the substance is gently ignited, to dissipate any ammoniacal salts present, then exhausted with water, the solution boiled with milk of lime or solution of baryta in order to precipitate magnesia, and, after filtering, the excess of the precipitant in the filtrate, as well as any other alkaline earths present, precipitated with ammonia and ammonium carbonate. This precipitate is washed with boiling water, and the filtrate evaporated to a small bulk; when cold, a little ammonia and a few small crystals of ammonium oxalate are added, and the whole made up to a definite volume, in which the alkalies are readily determined.—*Arch. d. Pharm.*, Jan., p. 52.

Oleostearate of Mercury or of Bismuth.—(P. YVON.) Take of protonitrate of mercury (mercurous nitrate), in crystals, 10 grams; chemically pure glycerin, 50 grams; water, 200 grams. Dissolve the salt in the glycerin, add the water, and filter. Then dissolve 10 grams of almond soap in about 300 grams of water, neutralize the alkalinity with very dilute nitric acid, separate the small quantity of separated fatty acids by straining, and finally mix the two solutions. Then strain off the liquid, wash the precipitate several times with distilled water, and express it forcibly.

The same process may be used to prepare the bismuth compound.—*Journ. de P. et Chim.*, 1879, 245.

Preparation of Malleable Nickel and Cobalt.—(TH. FLEITMANN.) Hitherto it was impossible to render metallic nickel and cobalt sufficiently malleable or ductile to form it into sheets or wire, or to obtain from them dense homogeneous castings. The author thought that this might possibly be caused by the absorption of carbonic oxide gas during the melting. He therefore tried to remove this defect by the addition of magnesium, which is known to reduce carbonic oxide as well as carbonic acid, with separation of carbon. He was surprised to find that even one-eighth of one per cent of magnesium was sufficient for this purpose. The resulting castings are most easily rolled or shaped when hot. Nickel retains its ductility even when cold; but cobalt becomes exceedingly hard, so that it may perhaps even be employed for cutting instruments. Both metals take a high polish and resist the action of the atmosphere. Cobalt is much more brilliant and whiter than nickel, the contrary statement of the text-books published hitherto notwithstanding.

The author particularly instructs those who desire to try this process, to introduce first a few pieces of charcoal into the crucible, in order to remove any oxygen, and then to add the magnesium through a hole in the lid; otherwise a violent explosion might result.—*Ber. d. Deutsch. Chem. Ges.*, 1879, 120.

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NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*

No. 550.—**To remove Spots from Varnished Articles** (D., Saginaw City, Mich.).

It depends altogether upon the nature of the substance which caused the stain. In absence of any specific knowledge of this point, we quote a method recommended in a German polytechnic journal. Make a mixture of equal parts of linseed-oil, alcohol, and turpentine, *slightly* moisten a rag with it, and rub the spots until they disappear. Then polish the spot with ordinary blotting paper. Varnish injured by heat can hardly be restored in any other way than by removing it and applying a fresh coat.

No. 551.—**To Bleach Ivory** (D., Saginaw City, Mich.).

Ivory is bleached by exposing it to the fumes of burning sulphur, largely diluted with air; or by immersing it in a very dilute solution of sulphurous acid, or in water containing a very little chloride of lime. Care must be taken not to have the solution too strong, nor to allow too long a contact, otherwise the ivory becomes brittle. A very good method is to moisten the ivory with water, to place it under a glass-shade, or in a glass-case in the sun-light, and to repeat the process until it is white. Piano-keys, if they cannot be removed, may be whitened by repeated scouring with finely powdered pumice-stone, containing two per cent of chloride of lime, and careful wiping afterwards. This must be done with great care, so as not to get any of the material in contact with the interior.

No. 552.—**To clean Gilded or Silvered Goods** (D., Saginaw City, Mich.).

The safest plan is to allow a stream of water to play upon the gilded or silvered surface, without employing friction by means of a sponge or anything else. If, however, the gloss and brightness will not return, the following liquid may be used, which must be done with care, and should first be tried on a spot where a slight abrasion would not spoil the appearance, to make sure that the coating will bear this treatment. Shake 1 oz. of quicklime with a little water, then add 1 pint of hot water to make a milk of lime; dissolve 2 oz. of pearlash in 1½ pints of hot water; mix the two solutions, cover, agitate occasionally for an hour, allow to settle, decant the clear liquid, and keep it in small well-corked bottles. It may be used either alone or diluted with water; the latter should be done whenever possible. It is applied with a soft sponge, *without rubbing*, and washed off with water. It goes by the name of Upton's Gold Detergent.

No. 553.—**Vettiver (or Kuskus)** (McK., etc., Nova Scotia).

This is the long fibrous root of *Andropogon muricatus* Retz (=*Anatherium muricatum* Pal., *Vetiveria odorata* Du P.-Th., etc.), belonging to the natural order Gramineæ. It is a large grass growing abundantly in rich, moist ground in Southern India and Bengal. It is neither a native of, nor is it cultivated, so far as we know, in the West Indies, as you suppose. It is, however, cultivated upon Isle de France (Réunion) and upon Bourbon. The root of this grass has long been used in India, and also in England, as a perfume. Bunches of it are laid in drawers and trunks; or screens are made of it in India, which, when moistened with water, emit an agreeable perfume. It has also been employed in medicine. In India it is reputed to be a stimulant and sudorific, being at one time highly recommended in cholera; this reputed effect caused its introduction in European practice, where it has been and is still met with under the name "Radix Ivarancusæ." It must be stated, however, that the latter name is also applied to the roots of *Andropogon Iwarancusa* Roxb. (=*Andropogon Schœnanthus* Thunb.). The odorous principle is an essential oil of very fine persistent odor, which is very expensive. The root may be purchased from wholesale drug houses here at New York at 35 to 40 cents per pound. The essential oil is sold by Fritzche Bros. (branch of Schimmel & Co., Leipzig, Germ.) in ¼-pound bottles, at $10 per ounce; smaller quantities at an advance over package price. An extract may be made from the root by exhausting it with odorless alcohol and diluting with water, short of producing cloudiness. It is, however, best to employ the oil. The usual proportion to make "Extrait Vétyver" is to dissolve one part by weight of the essential oil in seventy parts of alcohol.

No. 554.—**Green Soap** (C. B. & Co., Covington, Ky.).

A good formula for making this was published on p. 236 of our last volume. It is that given by Mr. E. B. Shuttleworth, of Toronto, Can. We will repeat it here:

In a clean pot or dish, preferably of iron or copper, and capable of containing at least 3 times the quantity, put 1 part by weight of linseed oil; heat gently and add, in two portions, 3 parts in all, by measure* of liquor potassæ containing 5.8 per cent of hydrate of potassa. Boil quietly and stir frequently until the mass becomes clear which, with 4 oz. of oil and 12 fl. oz. of liquor, will require about one hour, and with 10 pounds of oil about five hours. If, during the process, the mass becomes too thick to stir easily, add a little water. Allow the soap to become cool, but before it sets work in the coloring matter, which must be previously prepared by boiling finely powdered indigo with water until the color is formed into a thin paste. 20 grains of indigo, boiled with 1½ oz. water, until the mixture is reduced to about 1 fl. 3, will answer for the soap from 4 oz. of oil. The soap must not be too hot, nor must it be reboiled after adding the coloring matter, or the green will be destroyed. [The addition of a very small amount of caustic soda causes the soap to be full of small solid granules of soda soap, which is sometimes preferred.—Ed. N. R.]

No. 555.—**Olive Oil Adulterated with Cotton Seed Oil** ("Subscriber").

All the tests which have at various times been proposed to recognize mixtures of different fixed oils suffer from want of absolute certainty, and may all be pronounced to be unreliable, unless there are some other known data upon which the investigation may be based. If, however, one fixed oil is substituted for (and not merely mixed with) another, the question becomes more easy of solution. In this case the specific gravity, solidifying point, drying power, optical behavior, and deportment with reagents will generally suffice to identify the oil. The best tests to distinguish between *olive* and *cotton seed oils* are:

1. The Elaïdin-test.† Introduce into a test-tube equal volumes (about 6–10 cc.) of the oil and of nitric acid (sp. gr. 1185), shake, add some copper turnings or a little mercury, and set aside at a temperature of 15°–20° C. (59–68° F.). All *non-drying* oils are converted, under these circumstances, in from half an hour to twenty-four hours, into a more or less solid mass, *elaïdin*. Drying oils, however, remain completely liquid, even after many days' standing, while the intermediate oils only partially solidify in from one to two days, there being always some liquid oil separated from the solidified elaïdin. This test applied to olive and cotton seed oil will render, *within two hours: Pure Olive Oil:* whitish and turbid (so also: peanut, sweet almond, and castor oil).

* Parts by weight are here avoirdupois ounces and their multiples; parts by measure are British fluid ounces and their multiples 1 fl. oz. of British or imperial measure is equal to 7 fl. drachms 41 min. of U. S. or apothecaries' measure.

† See *Hager, Pharmaceutische Praxis*, II., 572 seq.

Ordinary Olive Oil: yellowish-white, or pale-yellow (so also: beech-acorn, bone, fixed bitter almond, cod-liver, peach kernel, refined rapeseed, and lard oil).

Cotton Seed Oil: yellowish-brown or reddish-brown.

In from *eight hours to two days*, the appearance will be as follows:

Pure Olive Oil: a white, witish, or yellowish-white mass, solid throughout (so also: peanut, sweet almond, and castor oil).

Ordinary Olive Oil: a yellowish to yellow or brownish-yellow mass, almost entirely solid (so also: bone, lard, and refined rapeseed oil; the latter, however, yields a trace of fluid residue).

Cotton Seed Oil: a yellowish or yellow or brownish-yellow solid mass, together with *liquid* oil (so also: beech-acorn, fixed bitter almond, peach kernel, sun-flower oils, and all mixtures of non-drying and drying oils).

2. The *Nitrate of Silver* Test. Dissolve 1 gm. of silver nitrate in 2 gm. of distilled water, and dilute the solution with 50 cc. of pure absolute alcohol. Put about 6 cc. of the oil into a large test-tube, then add 3 cc. of the silver solution, shake well, so as to make a sort of emulsion, and heat, without letting the flame touch the bottom of the test-tube, to boiling, which is to be continued for fifteen seconds. Then set aside for a few hours. After this time there will be observed, either a reduction of the silver salt, or a coloration of the oil, or no change at all.

a. Unchanged, even in color, remain:

Best *olive* oil.
Ordinary *olive* oil (if free from oil of rosemary and oil of turpentine).
Beech-acorn oil.
Hemp oil.
Cod-liver oil.
Sweet almond oil.
Castor oil.
Sesame oil.

b. The following will turn darker, brown, brown-red to black:

Purified cotton-seed oil (dark-brown to black).
Rape-seed oil (mostly brown-red).
Rape-seed oil freed from resin (dark brown-red).
Bone oil (dark brown-red).
Linseed oil (darker and red-brown).
Fixed bitter almond and peach-kernel oil (darker after several hours' standing).
Lard oil.

No. 556.—**Analysis of Cologne** (A., Mystic River, Ct.).

Such compound cannot be analyzed with any degree of certainty, as there are no sharp methods known for separating volatile oils. The only way to find out the composition of a cologne, is *synthesis*. Try and mix odors until you come near or hit the one you intend to equalize. But if you have not had a considerable previous experience in making perfumes, you will find the method rather expensive.

No. 557.—**Farina-Piesse's Tooth Powder.** (D., Allentown, Pa.).

Mix Precipitated chalk	2 lbs.
Powdered orris root	2 lbs.
Sugar, in fine powder	9 oz.
Carmine	30 grs.
Oil neroli	15 min.
" lemon	150 min.
" bergamot	150 min.
" orange peel	150 min.
" rosemary	30 min.

No. 558.—**Ginger Ale Extract** (R. C., Toronto, Can.).

The following formula may be used:

Jamaica ginger, powdered	3 lbs.
Lemon peel, fresh	1 lb.
Capsicum, powdered	½ oz.
Alcohol	1 gall.

Macerate for fourteen days and filter. For making ginger ale, three ounces of the above extract should be taken for each gallon of simple syrup. But when thus made, the syrup and the ginger ale have a muddy appearance, owing to the resin and essential oil which partly separate. It is preferable, therefore, to evaporate 3 fl. oz. to a small bulk, to rub the residue in a mortar or other suitable vessel with perfectly clean and pure chalk and a small quantity of water, and gradually to add the remainder of the water requisite under continued trituration. This solution is then filtered through a well-wetted filter, and the proper amount of sugar dissolved in it.

No. 559.—**Clarifying Syrups without Albumen** (same).

We cannot imagine what objection there could be made against the practice of clarifying syrups with albumen; besides we know of no better method to accomplish this, when working with *large* quantities of syrup, than by means of egg-albumen, if the syrup is colorless. For colored syrups, fresh ox-blood may be used. In either case, the clarifying agent should be added to the syrup before heating; or if the sugar has not yet been dissolved in the menstruum, this should first be done, and the syrup allowed to cool down to at least 125° F., before adding the albumen or blood. It should then be rapidly heated, without stirring, until the albumen coagulates and rises to the top. Stirring the liquid breaks up the shreds of coagulated albumen, which is thereby prevented from enveloping all the finer impurities, and is apt to leave some of the latter in the syrup.

If egg-albumen is used, this should be beaten to a froth with water, so as to incorporate air into it and make it specifically light. But, if the syrup can be heated rapidly, and if it is *not* stirred during heating, the albumen need not be beaten with water any further than to make a clear and homogeneous solution.

For smaller quantities of syrup paper-pulp may be used to advantage. Possibly this might also be used on a large scale. Good white unsized or blotting paper, free from mineral impurities, is torn into shreds and thoroughly soaked and washed in water, until the paper is reduced to a pulp. After draining, the wet pulp is added to the syrup, in the proportion of about 4 oz. for every gallon, and the mass well stirred up. It is then filtered through flannel.

No. 560.—**Cement for Wedgewood Mortars** ("Dextro-Quinine").

If you desire to use the broken wedgewood mortars for trituration or powdering hard substances, we fear that no cement would be sufficiently strong to keep the parts together. Nevertheless the mortars may be put to various practical uses, and, with care, may be made to last a long time. One of the following cements may be used:

1. Casein, free from fat, and washed until no longer acid,
Silicate of soda solution (waterglass) of each q. s.

Fill a bottle to one-fourth of its height with damp casein; then fill the flask with silicate of soda (waterglass), and shake frequently until the casein is dissolved. The casein should be made by curdling *skimmed* milk, and well washing.

2. Glass-flour, elutriated ..... 10 parts.
Fluorspar, powdered and elutriated.... 20 "
Silicate of soda..... 60 "

Both glass and fluorspar must be in the finest possible condition, which is best done by shaking each, in fine powder, with water, allowing the coarser particles to deposit, and then to pour off the remainder which holds the finest particles in suspension. The mixture must be made very rapidly, by quick stirring, and when thoroughly mixed must be at once applied. This is said to yield an excellent cement.

3. Freshly burnt plaster of Paris..... 5 parts.
Freshly burnt lime..... 1 part.
White of egg..... sufficient.

Reduce the two first ingredients to a very fine powder and mix them well; moisten the two surfaces to be united with a small quantity of white of egg, to make them adhe-

sive; then mix the powder very rapidly with white of egg, and apply the mixture to the broken surfaces. If they are large, two persons should do this, each applying the cement to one portion. The pieces are then firmly pressed together, and left undisturbed for several days. The less cement is used, the better will the articles hold together.

4. If there is no objection to a dark-colored cement, the very best that can be used is probably *marine glue*. This is made thus:

10 parts of caoutchouc or India-rubber are dissolved in 120 parts of benzine or petroleum naphtha with the aid of a gentle heat. When the solution is complete, which sometimes requires 10 to 14 days, 20 parts of asphalt are melted in an iron vessel, and the caoutchouc solution is poured in very slowly, in a fine stream, and under continued heating, until the mass has become homogeneous, and nearly all of the solvent has been driven off. It is then poured out and cast into greased tin moulds. It forms dark-brown or black cakes, which are very hard to break. This cement requires considerable heat to melt it; and to prevent it from being burnt, it is best to heat a capsule containing a piece of it first on a waterbath, until the cake softens and begins to be liquid. It is then carefully wiped dry, and heated over a naked flame, under constant stirring, up to about 300° F. The edges of the article to be mended should, if possible, also be heated to at least 212° F., so as to permit the cement to be applied at leisure and with care. The thinner the cement is applied, the better it binds.

No. 561.—**Drying and Powdering Opium** (R., Boston, Mass.)

There is no "economical" method of drying opium for the purpose of powdering; at least there should not be. There are a good many lots of powdered opium in the market which contain more moisture than they ought. Small quantities of gum opium are best dried by beating each cake to a thin broad disc with a wooden mallet, exposing it for some time to the heated air of a drying closet; then allow it to cool, when it may be broken up to a coarse powder, which may have to be dried once more before it can be powdered.

No. 562.—**Explosive Colored Fires** ("Subscriber").

This correspondent asks, whether a mixture of strontium nitrate, potassium chlorate, shellac, and camphor, if kept in tin cans, would change in character by keeping, or would be spontaneously explosive.

We know of no instance where such a mixture has actually exploded, but similar compounds have often exploded spontaneously, as we have shown in an article published in our last year's volume, page 167. We therefore dissuade our correspondent from embarking in this enterprise. The causes of these spontaneous combustions are not sufficiently known; hence it is impossible, *a priori*, to say, whether one mixture is more liable to explode than another.

Our correspondent requests us to ask any of our readers who may have had experience in this direction, to communicate the same to him through the pages of our journal.

No. 563.—**Tinctures, Wines, etc., from Fluid Extracts** (F., Newark, N. J.).

Our correspondent asks: "Supposing a pharmacist does not have the necessary apparatus, such as percolators, etc., has he a right to make and dispense tinctures, wines, elixirs, etc., made from fluid extracts?"

No pharmacist has the right to depart from the directions of the U. S. Pharm., as long as it has not been conclusively shown that a particular process is wrong. Until it is clearly proven that tinctures and wines (we will not speak of elixirs here) made from fluid extracts are in *all* respects equal in therapeutic properties to the regular preparations made according to the U. S. Pharm., and until this pharmaceutical code recognizes the propriety of doing so, it is to be discouraged. This view applies not only in a general way theoretically, but more particularly to many commercial fluid extracts which are not up to the standard of the Pharmacopœia. We can, of course, imagine many cases where want of time or want of apparatus may render it *necessary* to have recourse to such an abbreviated method. In that case, as an exception, it may be permitted to use this method, provided the fluid extract was *thoroughly* reliable. While we are compelled, at present, and in absence of any permission by the last U. S. Ph. of using this process, to give this decision, we nevertheless are aware of the desire of many pharmacists that such an alternate process may be sanctioned by the authority of the Pharmacopœia. For, *if* a well-made fluid extract *does* represent the crude drug minim for grain (or weight for weight, as it is proposed for the future), why should this very same fluid extract, diluted with the proper menstruum, not to be capable of producing a tincture corresponding in strength of active ingredients with that of the present preparations? This is the argument made use of, and it certainly deserves attention. At the same time it should not be forgotten that a tincture made from a fluid extract *does* differ from one prepared from the crude drug. For, by reason of the concentration of the fluid extract, there is often produced a disturbance of the proportion of the various ingredients, perhaps in most cases of the less important ones; certain constituents may have refused to enter into solution; others may have separated out; although the substance which we are capable of recognizing as supposed *active* ingredient may still be there. Yet we are by no means sure that some of the supposed inert matter which may have separated or not dissolved does not in some manner modify the action of the drug. Before such a modification of the process can be sanctioned, it is requisite that pharmacologists should make careful comparative experiments with tinctures made by both processes from one and the same drug. After they have ascertained their identity in therapeutical action, there is no reason why the process may not be adopted.

No. 564.—**Elixir of Pepsin and Bismuth** (F., Newark, N. J.).

Although there are a number of formulæ recommended for this elixir, the combination is regarded by good authorities to be at best of doubtful utility. Pepsin is only active in presence of an acid, but the latter precludes the possibility of having bismuth in solution, unless the solution is excessively acid. It should be entirely discouraged. There is no better way than to give them in form of powder, or to give them separately in solution.

Whether the particular elixir mentioned by you actually contains 60 grains of pepsin in the fl. oz. is much to be doubted.

No. 565.—**Simple Elixir** (Several Inquirers).

The following formula is that adopted by the American Pharm. Association (see *Proceed.*, Vol. 21, 1873), p. 120:

Spirits of orange	½ fl.
Cinnamon water	6 fl.
Stronger alcohol	4 fl.
Syrup	6 fl.

This is turbid, and may be used so for many purposes. But when desired clear, it may be rendered so by clarifying it with paper pulp. Sixty grains of pure filtering paper are beaten in a mortar to a pulp with ½ fl. ʒ of water; this is added to the above elixir, agitated briskly for a few minutes, and the whole then filtered, when it will be perfectly limpid.

No. 566.—**Hall's Solution of Strychnia** (W., Kirksville, Mo.).

Dr. M. Hall was in the habit of using generally the following:

℞ Strychniæ acetatis	gr. 1.
Acidi acetici	♏. 20.
Alcoholis	fl. ʒ 2.
Aquæ	fl. ʒ 6.

Dose: 10 drops thrice daily as a tonic in nervous exhaustion.

But he is known to have often varied it, as it may natu-

rally be supposed, so as to adapt the dose of strychnia to the age or condition of the patient. Hence there is no actual standard formula.

In the public hospitals of New York City, and also in private practice, the following modified formula is recognized:

Mistura Strychniæ (*Hall's modified*).

℞ Strychniæ acetat.....gr. 1
Tr. cardamomi comp.....fl. ʒ ½
Alcoholis,
Aquæ.....āā fl. ʒ 2½
Syrupi.....q. s. ad fl. ℥ 4

Dose: a teaspoonful.

No. 567.—**Pharao's Serpents** (D., Grand Haven, Mich.).

These were formerly prepared from sulphocyanide of mercury, but, owing to the poisonous fumes which they give off during combustion, they are at present made from this material only by a few unscrupulous pyrotechnists. In Europe, most Governments have forbidden their use, if they contain mercury, and the same should be done here, either through police laws or through the influence of the intelligent classes. Having said this much, we may state, as a matter of information merely, that they used to be prepared as follows:

One pound of dry sulphocyanide of mercury is mixed with one oz. of gum tragacanth, which has been previously soaked in hot water. When the gum is completely softened, it is transferred to a mortar, and the sulphocyanide of mercury (in fine powder) is mixed with it by the aid of a little water, so as to turn out a somewhat dry pill-mass. This is then formed and cut into pellets of the desired size, which are dried on glass.

Instead of this poisonous salt, the less hurtful bichromate of potassium or ammonium is now frequently used. For this purpose, two parts of bichromate of potassium, or better, bichromate of ammonium, are mixed with one part of potassium nitrate and three parts of dry white sugar. Each of the ingredients is to be powdered separately, and afterwards they are to be thoroughly and carefully mixed together. Then having made small paper cones of the desired size, press the mixture into them. They are now ready for use, but must be kept from moisture and light.

No. 568.—**Writing Fluid** (E., Grand Rapids, Mich.).

The property of an ink to turn gradually from a greenish-blue to a deep black depends upon the presence of various coloring matters, the most usual of which is indigo-carmine. A very good formula for an easily flowing ink, turning from greenish-blue to deep black, is the following:

Nutgalls.....	200	parts.
Green sulphate of iron.....	60	"
Gum arabic.....	10	"
Vinegar.....1,000		"
Indigo-carmine solution.....	200	" or q. s.

The first thing is, to prepare indigo-carmine of the first quality, since upon this much of the quality of the ink itself depends. Proceed as follows: Powder a sufficient quantity, say about ten ounces of the best Bengal indigo, dry it at a temperature not exceeding 110° C.° (=230° F.), then pour upon it slowly and under stirring four times its weight of *fuming*, or so-called Nordhausen sulphuric acid. The mixture must be made in a capacious capsule, as it swells up and foams. It is covered up, and allowed to stand for twenty-four hours. During this time, the coloring matter of indigo combines with the sulphuric acid, forming indigo-sulphuric acid. This might be at once converted into indigo-carmine, but the product would not be handsome, as the sulphuric acid carbonizes some foreign constituents of the indigo, and thereby imparts to the solution a dark color. To remove these, the acid liquid is diluted with about ten times its bulk of water, and allowed to settle in a tall flask for a few days. The clear solution, which has a magnificent blue color in thin layers, is then evaporated at a gentle heat, and during the evaporation gradually neutralized with potassium (or sodium) carbonate. The liquid now contains in solution "indigo-carmine," which is nothing else but "indigo-blue-sulphate of potassium (or sodium)." It may be separated from the water by "salting it" out with soda or common salt, but is best kept in moderately concentrated solution, and as such used in the above formula, to which the following further directions apply:

Powder the nutgalls, pour on the vinegar, and let stand for a few days; then draw off the solution, boil a quantity of it (about 200 parts) with the powdered sulphate of iron and gum arabic, and add the hot solution to the remainder. Finally add the indigo-carmine solution in measured portions until, after well stirring, a sample removed shows the required tint.

Another formula: Elsner's "Alizarin Ink."

Exhaust 75 parts of nutgalls with 250 parts of water. Pour 25 parts of fuming sulphuric acid on 12 parts of best powdered indigo, contained in a large capsule, and let it stand for twenty-four hours. Then dilute the contents with 250 parts of water. Add to the diluted liquid 22 parts of clean iron-filings or turnings, and 15 parts of chalk. After a few days, during which the mixture is frequently stirred, but as little as possible exposed to the air, it is filtered, and the filtrate added to the nutgall decoction, which has likewise been filtered. This ink first writes greenish, and afterwards turns blue-black.

No. 569.—**Bay Rum** (P. and M.).

The genuine bay rum is made by digesting the leaves of the bay plant (an aromatic plant which grows in the West Indies) in rum, and subsequent distillation. The imitation is prepared from the essential oil obtained from the plant. Mix one ounce of oil of Bay (or ¾ ounce oil of bay, and ¼ ounce of either oil of pimento or cloves) with 4 gallons 95 per cent alcohol; then add gradually 4 gallons of water, shaking the mixture constantly. If the mixture should become milky, the addition of a little alcohol will make it clear. Probably the best imitation is as follows: 10 fluid drachms oil of bay, 1 fluid drachm oil of pimento, 2 fluid ounces acetic ether, 3 gallons alcohol, and 2½ gallons water. Mix, and after two weeks' repose, filter.

No. 570.—**To Render Ivory Flexible** (Ph. G., Rochester, N. Y.).

Ivory is rendered flexible by immersion in a solution of pure phosphoric acid (specific gravity 1.13) until it loses or partially loses its opacity, when it is washed in clean cold water, and dried. In this state it is as flexible as leather, but gradually hardens by exposure to dry air. Immersion in hot water, however, restores its softness and pliancy. The following method may also be employed: Put the ivory to soak in 3 ounces nitric acid mixed with 15 ounces water. In three or four days the ivory will be soft.

No. 571.—**Cleaning Hand-Mills** (O., Providence, R. I.).

If you desire to grind different spices, orange or lemon peel, in the same mill, without any one being affected by another spice, grind a small quantity of rice through the mill and all impurities will be removed. A coffee mill may be fitted to grind any spice in the same way. The rice will of course be flavored by whatever may have been in the mill. It is useful to thicken soups or gravies or sauces, when the spices are no objection. Mills which have been used for grinding drugs are best cleaned by running through them first a handful of mustard, then of flaxseed, and finally enough dry pine sawdust, until all flavor is removed.

No. 572.—**Fining Wines** (M. W., Ithaca, N. Y.).

To fine 40 gallons wine, steep 1 ounce isinglass in 1 pint of pure cold water over night, and then melt it over a gentle charcoal fire, until a uniform gelatinous mass is formed. When cool, mix with it 3 pints wine, and let it repose twelve hours in a moderately warm room. Then add 1 gallon wine and mix the whole in a wooden vessel; whisk it with a clean broom until it foams up. Pour this mixture gradually in the wine you desire to fine, being careful to stir the whole continually during the process.

Bung up the cask, and in the course of forty-eight hours the wine will appear perfectly clear and bright. Isinglass prepared in this way will precipitate perfectly, and leave no particles suspended in the wine.

No. 573. — **Indestructible Writing Ink** ("Subscriber").

The following formula is recommended: Shellac, 4 parts; borax, 2 parts; soft water, 36 parts; boil in a close vessel till dissolved; then filter, and take of gum-arabic, 2 parts; soft water, 4 parts. Dissolve and mix the two solutions together, and boil for five minutes as before, occasionally stirring to promote their union; when cold, add a sufficient quantity of finely powdered indigo and lampblack to color; lastly let it stand for two or three hours, until the coarser powder has subsided, and bottle for use. Use this liquid with a clean pen, and keep it in glass or earthen inkstands, as many substances will decompose it while in the liquid state. When dry, it will resist the action of water, oil of turpentine, alcohol, diluted sulphuric acid, diluted hydrochloric acid, oxalic acid, chlorine, and the caustic alkalies and alkaline earths.

No. 574.—**Apple Essence, Artificial** (R. C., Toronto, Can.),

This is made from

Valerianate of amyl ("apple oil")	1 part.
Alcohol, 92%	7 parts.

Another formula, which is often quoted and much used prescribes

Glycerin	4 parts.
Aldehyde	2 "
Chloroform	1 part.
Nitrous ether	1 "
Acetic ether	1 "
Valerianate of amyl	10 parts.
Saturated solution of oxalic acid in alcohol	1 part.

No. 575.—**Emulsion of Cod-Liver Oil.** ("Sub."). You will find formulæ for this in our last number, page 156.

On the Confervæ in Officinal Solutions.—(CHARLES MÉNIÈRE.) Fowler's solution, as well as other pharmaceutical liquors, often become loaded with a fungous growth, which is generally accompanied by a decomposition, resulting in the separation of some of the active constituents. The fungus developing in Fowler's solution, which has already been recognized several years ago, is the *Hygrocrocis arsenicus*. The same occurs also in solutions of arsenious acid, in Goulard's water, in solutions of barium chloride, and in sulphurous or ferruginous mineral waters. It appears as a round body, increasing gradually to a size of three to four millimetres, and attaching itself particularly to any crystals which may be deposited at the same time. After a while very fine filaments are thrown out from the nucleus, which interlace with each other, and appear then as a lightly colored woolly tissue.—*Rép. de Pharm.*, 1879, 103.

Detection of Free Mineral Acids in Vinegar.—Mr. F. MASSET recommends to use sodium salicylate as a reagent for this purpose. This salt is decomposed with liberation of salicylic acid, by all the mineral acids in a free state, as well as by some of the stronger organic acids, such as tartaric or oxalic. But acetic acid does not decompose it at once, although it does so after a considerable time. About one to two fluid drachms of the vinegar (or acetic acid) to be examined is poured into a test-tube, and twenty to thirty minims of a twenty per cent solution of sodium salicylate are then added. If any mineral acid was present, salicylic acid will be liberated in flocculent masses, and in quantity corresponding to the mineral acid present. This is, of course, only a preliminary test; if it yields evidence of the presence of the suspected impurity, the nature of the latter must be determined by the usual analytical methods.—*Jour. de Pharm. d'Anvers*, 1879, 88.

NEW PATENTS.

[*The following list is compiled from official sources, especially for* NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 10 Spruce St., New York, who will furnish gratis to subscribers any information relating to this department.*

PATENTS GRANTED DURING FEBRUARY, 1879.

February 4th, 1879.

Bottle-stopper fastener, W. Geist	211,987
Bottles, removable nozzle for, E. B. Requa	212,055
Oil, rubber, G. L. Scott & C. McCumber	212,058
Paints and oils, composition for drying, A. W. Pratt	211,928
Syringe, J. T. Palmer	212,046

February 11th.

Bottle fastening attachment, S. Martinelli	212,246
Dental plugger, magnetic, A. Shiland	212,114
Syringe attachment, A. Berger	212,177

February 18th.

Bottle filler, W. S. Paddock	212,494
Dental plugger, W. G. A. Bonwill	212,434
Pill machine, W. N. Fort & R. R. Moore	212,453
Truss, J. R. Alexander	212,344

February 25th.

Ammonia, man'f. of muriate of, W. Gentles	212,596
Bottle-stopper and fastener, H. W. Putnam	212,623
Catarrh remedy, S. T. Dobyns	212,667
Galvanic body wear, D. P. Bible	212,650
Injector, J. Cain	212,590
Inspirator, W. R. Park	212,620
Speculum and syringe combined, W. Harz	212,600
Spoon, nursery and medical, J. W. Force	212,677

TRADE MARKS REGISTERED DURING FEBRUARY, 1879.

Medicinal Preparations.

7,001. Nathan Van Beil, New York, N. Y. The letters and words "Rye and Rock."

7,023. Carter Medicine Co., Erie, Pa. The capital letter "L," it forming the initial letter of the words "Little Liver," substantially as shown.

7,024. Carter Medicine Co., Erie, Pa. The symbol formed of the word "Iron," and a bar or panel extending horizontally across the same, substantially as shown.

7,029. Maranda C. White, New York, N. Y. The words "White's," and the disc or circular device located above the same.

7,033. Joshua S. Nicolds, Claiborne Parish, La. The arbitrarily selected words "Wonderful Eight."

7,053. Arthur De Voe, Indiana, Pa. The arbitrarily selected word-symbol "Ammucose," and the pictorial illustration or figure shown, representing the eyes ears, nasal fossæ, etc.

Soaps, Perfumery, etc.

6,996. Louise F. Marshall. New York, N. Y. The letter and word "F. Coudray.

7,007. The Wrigley Manufacturing Co., Philadelphia, Pa. The word "Wrigley's," the monogram composed of the letters "W. A. S." and the large capital "W."

7,011. Meyer Bros. & Co., St. Louis, Mo. The figure of a lion with a crown upon its head.

7,020. Johann Maria Farina, Cologne, Germany. The chain or series of different prize medals as shown.

7,036. Gallup & Hewitt, Norwich, Ct. The arbitrarily selected words, "The White Grecian."

7,052. E. Coudray et fils, Paris, France. The representation of a wreath and the arbitrary symbol "E. E. C.," arranged as a monogram.

Chemicals, Paints.

7,004. Fritzsche Bros., Hoboken, N. J. The letters "F. B." arranged in the form of a monogram, the firm-name "Fritzsche Brothers," the shield, figures of the lions, globe, eagle, and star, and the whole as arranged and described.

LABELS REGISTERED DURING FEBRUARY, 1879.

1,849. "Everlasting Cologne." R. H. Brown, Baltimore, Md.
1,850. "Sulphited Soap." William Olds & Edgar C. Andrews, Indianapolis, Ind.
1,852. "Hooper's Cough Mixture." John P. Scherff, Bloomfield, N. J.
1,857. "Hyde's Rheumatic Pills." James J. Lash, Albion, Ind.
1,858. "Old's Medicated Ozone and Oxygen Inhaler." Edward F. Olds, Philadelphia, Pa.
1,859. "Heinrich Beerenburg's Hollandisches Kräuter Elixir." John Rendigo, Cincinnati, O.
1,860. "Hale's Cough Cordial." Orange Williams, Janesville, Wis.
1,861. "Dr. Champlin's Worm and Bilious Remedy." Hallam C. Champlin, Owego, N. Y.
1,862. "The Corn Killer." J. D. Judge, Boston, Mass.
1,864. "Dreydoppel's Borax Soap." William Dreydoppel, Philadelphia, Pa.
1,865. "Neuralgia Cure." S. T. Stone, Gainesborough, Tenn.
1,870. "White's Neuralgia Cure." E. B. White, Lancaster, Ohio.
1,871. "Anti-Constipation." Richard J. Owens, Brooklyn, N. Y.
1,872. "Vaginal Specific." D. P. Robbins, Union City, Pa.
1,873. "Meadow's Liniment." Albert C. Tufts, Woodland, Cal.
1,875. "Dr. Harrison's Pain Curer." Samuel W. Harrison, Lowell, Mass.

PRESCRIPTIONS AND FORMULÆ.

Benzoate of Iron (Ferric).—(Dr. H. Hager.) This salt, which was first recommended for the preparations of Ferrated Cod-liver Oil, has lately been used also as a remedy in scrofula with good success in doses of 1½–3 grains, 3–4 times daily, in troches. It may be prepared thus:

Mix:	Solution of ammonia (sp. gr. 0.960)	100 parts.
	Distilled water	1500 "
Add:	Benzoic acid, crystallized and prepared by the wet way	37 "
Then:	Acetic acid, dilute (sp. gr. 1.040). or enough to neutralize the solution.	60 "
Then add gradually a mixture of:		
	Solution of ferric chloride (sp. gr. 1.480)	72 "
	Distilled water	100 "

After 24 hours the precipitate is collected on a strainer, washed with cold water, expressed, and dried in a warm place. The product amounts to 60–62 parts.

Its composition is: $Fe_3C_7H_5O_2 + Fe_2O_3 + 15H_2O$.—*Pharm. Centralh,*, 1879, No. 2.

Naringin (=de Vrij's Hesperidin).—(E. Hoffmann.) All parts of the fruit of Citrus decumana (pompelmousse), particularly the flowers, contain a bitter principle which was discovered by de Vrij in 1857, and was for a long time considered to be identical with the substance "hesperidin," previously discovered by Lebreton (1828) in oranges. The author assigns to naringin the composition: $C_{23}H_{26}O_{12}.4H_2O$.

Carbolized Lint.—Prof. Bruns in Heidelberg uses a carbolized lint which is prepared by saturating 1 kilogram of lint with a solution of 100 gm. carbolic acid, 400 gm. resin, and 40 gm. castor oil in 2 litres of alcohol.

Itch Ointment.—

Sperm oil	180 parts.
Storax	60 "
White wax	30 "
Tinct. of benzoin (U. S. P.)	1 part.
Alkanet root	1 "

Melt the wax, add the oil and alkanet root, and strain through muslin; then add the storax and tincture of benzoin.—Frank A. Davidson in *Pharm. Journ.*

Indian Brandy.—

Spirit of nitrous ether	10 lb.
Water, distilled	1 lb.
Syrup, simple	4 lb.
Burnt sugar	2 oz.
Tinct. of capsicum	½ oz.

—Corresp. of *Pharm. Journ.*

Girardin's Antidyspeptic Powders.—

Bismuthi subnitratis	5 00 gm.
Testæ præparatæ	8.50 "
Ignatiæ (powd. St. Ignatius' bean)	1.00 "

Mix and divide into 20 powders. One to be taken before meals.—*L'Orosi* fr. *Pharm. Weekblaad.*

Lotion to prevent Dandruff.—

Tinct. of capsicum	2 oz.
Glycerin	8 "
Cologne	25 "
Water	25 "

Mix. Wash the head daily with this lotion.

Rhubarb Test-Paper.—M. Lacour has invented a new test-paper. He adds to powdered rhubarb twice its weight of liquid ammonia, and after maceration for a quarter of an hour filters the liquid. Strips of paper dipped into it are dried, and are of a red purple color. These when touched with acids become of a lemon yellow, and with alkalies their former color. It is said to be a very sensitive test.—*Pharm. Journ.*, Feb. 22d.

Unguentum Diachylon Hebræ.—The formula used in the preparation of this ointment in Prof. Hebra's clinic at Vienna, is the following:

1 kilo of oxide of lead is heated with 4 kilos of olive oil and a sufficient quantity (about 8 fl. ʒ, to be replaced from time to time) of water until complete saponification has taken place; then strain, and when the product is beginning to cool add 50 grams of oil of lavender.—*Pharm. Zeit.*

Shorter and equally good processes were published by us in our volume for 1876, p. 350.

Sugar-Beet Beer.—R. Mattern, of Brandis near Leipzig, gives the following directions for preparing a pleasant beer-like beverage from sugar-beets.

The beets are cut into slices, dried and roasted, but so as not to destroy their saccharine constituent. They are then boiled for 2 hours with water. For each kilo (2¼ lb.) of roasted beets, 25 gm. (386 grs.) of hops, previously boiled in water, are added to the former decoction. The quantity of water should be such that the final beer measures 16 litres. When the product has cooled to 20° C. (68° F.) 20 gm. (300 grains) of compressed yeast are added, the whole is well stirred, bottled into flasks, and allowed to ferment at 15° C. (60° F.) for 7 or 8 hours, after which the flasks are corked. After an interval of three weeks the beer is ripe.—*Pharm. Zeit.*

Hair Restorative.—

Castor oil	25 grams.
Tannic acid	5 "
Oil of bergamot	1 "
" lemon	1 "
Alcohol 92%	150 "

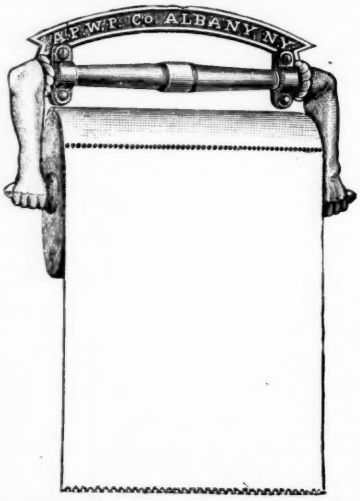
—*Pharm. Weekbl. voor Nederland.*

NOVELTIES.

We omitted to say, last month, in connection with our notice of Newton's Patent Sprinklers, that Tyler & Finch, of 54 Cedar st., New York City, are the sole agents, and that to them all orders and correspondence should be addressed.

Perforated Wrapping and Toilet Paper.

The Albany Perforated Wrapping Paper Co. manufactures rolls of paper of various kinds and sizes, suitable for the use of druggists, confectioners, caterers, and dealers of all kinds, whose small wares require to be wrapped, the peculiarity being that the ribbons of paper are perforated, like postage stamps, at regular intervals, so that the segments may easily be torn off. By this arrangement there is an avoidance of waste, the paper is not exposed to dust and dirt, cannot be blown about or littered over the counter, and the edge of the sheet to be used is ready at hand without trouble in separating it from the balance of the



package. When ordered in suitable quantities, the rolls can be obtained with a business card printed on each segment. A handsome cabinet is made by the same company to hold a variety of sizes of paper-rolls in the most compact manner, and is provided with a twine-box in its top, so that the arrangement is complete, as shown in the above illustration.

Another form in which these perforated rolls have been made is that adapted for use in the water-closet, the roll being suspended as shown in the second cut.

By fixing the roll with a finger applied just beyond the line of perforations, the segment can be detached with little force. The expense of these rolls of toilet paper is no greater than that of paper in packages of the usual kind, and the convenience and economy of the arrangement is worth much more than the small cost of the fixture.

Colgate's Soaps.

The house of Colgate & Co., perfumers, are constantly bringing out novelties in their line, which very generally have merits to commend them to the public and the trade. Among their most recent introductions is a fine white toilet soap, delicately perfumed with "wild thyme," the cakes each done up in neat paper wrappers for retailing. Two other new soaps are called the "*Franco-American*" and the "*Reliable*," both attractive in appearance and moderate in price.

"*Cashmere Bouquet Sachet*" will, no doubt, prove as popular as their toilet soap of the same name, one of the best selling of all fine soaps.

"*Heliotrope Toilet Water*," in half-pint bottles, with neat label, will be a desirable and salable addition to the stock of all first-class druggists, as will also the new handkerchief perfume, "*Wedding March Bouquet*."

Mellin's Food.

This is to be included among the best of the preparations now offered as substitutes for breast milk and as a food for invalids. It is a matter of experience with nearly all physicians and nurses that the milk of some women is obnoxious to certain infants, while it agrees with others; that with some infants the milk of cows is well borne in it natural state, while in other cases it requires to be diluted or otherwise prepared before it can be used. It is not surprising, therefore, that there should be room for a variety of food-preparations suited to such cases. It is to be said of the one now referred to, that it has been found to be well adapted to the majority of occasions; that invalids, as well as infants, derive benefit from its employment, and that much of the lack of success with the use of it (and kindred preparations) is quite as likely to be owing to inattention to the directions furnished, as to the unsuitable nature of its composition.

The food is in the form of a finely granular powder, is agreeable to the taste, and is put up in glass bottles with glass stoppers seated in a cork-packing.

T. Metcalfe & Co., of Boston, are the agents for this continent.

Chaulmoogra Oil.

The demand for this new remedy has been greatly in excess of the supply in the hands of dealers, but we have lately received from McKesson & Robbins, of this city, a sample of the oil which they are now prepared to deliver, which answers, in its physical properties, all the evidences of being of good quality.

Messrs. Corbyn & Stacey, of London, who were instrumental in introducing this substance to the trade, have lately advised us that they have consigned a supply of their oil to the Messrs. Wyeth Bros., of Philadelphia, who are now likewise ready to furnish it to their customers.

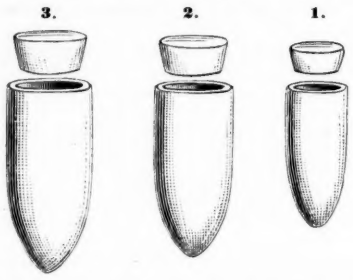
Poison Fly-Plate.

Hingston & Co., of Buffalo, have put into the market a convenient arrangement for using fly-poison, consisting of a stamped dish of tin, in the bottom of which a suitable

fly-poison has been placed and covered with thin paper. This avoids the necessity for providing a separate plate, as in a case where ordinary fly-paper is used, and likewise avoids the risk which may follow the subsequent use of such plate for the reception of articles of food.

Hollow Suppositories.

A NOVELTY which promises to be very useful is the hollow suppository, sold by Messrs. Hall & Ruckel, of 218 Greenwich street, of this city. It consists of butter of cacao moulded into the form shown in the illustration, and is adapted to receive a filling of any sort, after which the cavity can be closed and sealed by means of a stopper of



cacao-butter. Excepting in cases where a slow solution of the suppository mass is essential (and these are not very frequent), we can see no reason why the employment of these shells would not prove as labor-saving to the pharmacist and as satisfactory in results as anything yet proposed, and the wonder is, that, being so simple, they have not been long since resorted to.

ITEMS.

Sixth Decennial Pharmacopœia Convention.—To the several incorporated State Medical Societies, the incorporated Medical Colleges, the incorporated Colleges of Physicians and Surgeons, and the incorporated Colleges of Pharmacy throughout the United States.

By virtue of authority devolved upon me as the last surviving officer of the Pharmacopœia Convention of 1870, I hereby call a General Convention, to meet in Washington on the first Wednesday in May, 1880, for the purpose of revising the Pharmacopœia of the United States. For the information and guidance of all parties interested, I refer them to the rules adopted by the Convention of 1870, to be found on page 11 of the Pharmacopœia of the United States, and request their compliance with the spirit and intention of the said rules.

JAMES E. MORGAN, M.D.,
No. 905 E St., N. W., Washington, D. C.

Massachusetts Medical Society.—

To the Editor of NEW REMEDIES:

DEAR SIR:—Will you be kind enough to insert among your items of information for the benefit of your subscribers: That at the annual meeting of the Massachusetts Medical Society, to be held in Boston, June 10th and 11th, surgical instrument makers and druggists will not be allowed to exhibit their goods without first obtaining written authority from a committee, consisting of Dr. Amory, of Longwood, and Dr. J. O. Green, Jr., of Boston and that under no circumstances will the Society be responsible for any expense incurred by such exhibition. Applications for this authority must be received before June 1st. And oblige yours truly,

ROBT. AMORY, M.D.

For the Com. of Arrangements, Mass. Med. Soc.
April 29th, 1879.

Alumni Association of the Massachusetts College of Pharmacy.—The annual meeting of the Association of the Alumni of the Mass. Coll. Phar. was held at the Revere House, April 24th, and the following gentlemen were elected officers for the ensuing year:—*President*, W. W. Bartlett; *Vice-Presidents*, W. C. Durkee, E. P. Burley; *Secretary*, E. E. Babb; *Treasurer*, John C. Lowd; *Auditor*, J. E. Groff.

The report of the retiring President, L. C. Flanagan, was read and a committee appointed to consider the suggestions presented.

The report of the Treasurer, J. C. Lowd, showed a balance of about $300, and a membership of eighty.

At eight in the evening, the Association were seated in the spacious dining room of the Revere House, numbering, with invited guests, sixty, where, after discussing the acceptable dinner, Mr. Thomas Doliber was introduced as Toast Master of the evening, and in response to his calling, a representative was heard from each of the classes. Responses to the Toasts: "The Wholesale Trade," "The Honest Apothecary," etc., were well received. "The Babcock Extinguisher" was responded to by Prof. James F. Babcock, an honorary member.

Reference was made to the death of an honorary member, Prof. John Mudge Merrick, and after several poetical effusions by members of the Association, the members at twelve o'clock joined hands and united in singing "Auld Lang Syne."

Doctor Thomas L. Jenks and the graduating class of 1879 of the Mass. Coll. Pharmacy were the guests of the evening.

Pennsylvania Pharmaceutical Association.—This Association will hold its second annual meeting in Pittsburgh, on Tuesday, June 10th. Arrangements have been made with the Pennsylvania Railroad and connecting lines to furnish tickets at excursion rates, and hotel accommodations have been secured at reduced prices. Our friends in Pittsburgh will make arrangements for the comfort and social enjoyment of visiting members.

The attention of applicants for membership is called to the following extracts from the Constitution and By-Laws: Art. II., Constitution.—The aim of the Association shall be to unite the educated and reputable pharmacists and druggists of the State; to improve the science and art of of pharmacy, and to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries. Art. I., Chapter 1, By-Laws.—Every pharmacist and druggist of good moral and professional standing, whether in business on his own account, retired from business, or employed by another, and those teachers of pharmacy, chemistry, and botany who may be specially interested in pharmacy and materia medica are eligible to membership. The admission fee is $2, and annual contribution $1, which should accompany the application for membership, and be addressed to Mr. Charles H. Cressler, Chambersburg, Chairman of the Executive Committee.

All who are eligible are cordially invited to attend and bring with them objects of interest in materia medica, pharmacy, chemistry, etc. It is intended to have an exhibition of manufactured products, new inventions, novelties. specimens of drugs, apparatus, etc.

Chairmen of Committees will furnish a copy of their reports to the Chairman of the Executive Committee, and all persons writing papers for the Association will report to the same person.

As far as possible, applications for membership should be prepared, signed, and placed in the hands of the Chairman of the Executive Committee, in time to be acted upon at the first session.

Details with regard to the meeting, and the local arrangements, will be given in the circular of the Secretary, Dr. J. A. Miller, Harrisburg.

CHARLES A. HEINITSH,
President.

Chicago College of Pharmacy.—At the annual meeting of this College, held Tuesday, April 1st, 1879, the

following officers were elected for the ensuing term: *President*, Prof. C. Gilbert Wheeler; *Vice-Presidents*, Geo. Buck, F. M. Goodman; *Treasurer*, Adolf G. Vogeler; *Corresponding Secretary*, Henry Biroth; *Recording Secretary*, Geo. H. Ackerman; *Trustees*, Matt. W. Borland, N. Gray Bartlett, E. H. Sargent, J. S. Jacobus, R. H. Cowdrey, Thomas Whitfield, Jas. W. Mill, S. L. Coffin, C. F. Hartwig, F. G. Somers.

Louisville College of Pharmacy.—At a recent meeting of the Alumni Association of the Louisville College of Pharmacy, the following elections to office were made:—*President*, B. Buckle, M.D.; first *Vice-President*, W. F. Tafel; second *Vice-President*, Albert J. Schoettlin; *Recording Secretary*, Otto E. Mueller; *Cor. Secretary*, Arthur J. Elwang; *Treasurer*, Henry Buschemeyer, Jr.; *Executive Board*, Jno. Rudell, O. A. Beckmann, J. A. Flexner, Geo. Stauber, and J. C. Loomis.

The following gentlemen were appointed *Delegates* to the American Pharmaceutical Association: Otto E. Mueller, O. A. Beckmann, and Jno. F. Rudell.

Apothecaries and the Sale of Liquor.—A correspondent of one of daily papers, writing on the 28th of April from Washington, says: The last clause of section 3,246 of the Revised Statutes, as amended by the act of March 1st, 1879, reads as follows:

"Nor shall any special tax be imposed upon apothecaries as to wines or spirituous liquors which they use exclusively in the preparation or making up of medicines."

The Commissioner of Internal Revenue has thereupon issued a circular which declares that after careful consideration the conclusion is arrived at that the exemption from special tax accorded to apothecaries applies not only to the sale by them of their medicinal preparations or compounds composed in part of distilled spirits or wines, but also to any and all mechanical appliances and processes which they may find to be necessary or useful in the preparation or making up of medicines, and that an apothecary, therefore, notwithstanding the fact of his holding a special tax stamp as a liquor dealer, is not subject to special tax as a rectifier on account of his keeping a still or distilling apparatus for use exclusively in treating liquors, etc., employed in the making up of medicines.

Urinary Sediments as Patented Tooth-Powder.—A Belgian, T. L. Smits, of Brussels, has obtained a Belgian patent on a tooth-powder which he claims to be composed of water, 950; urea, 12; uric acid, 0.40; fixed salts, 7; organic substances, and calcium oxalate, oxaluric and urate, cystin, etc. Now, as all these substances are present in the proportion in which they exist in urine, and as the "inventor" no doubt could not have obtained a patent on urine as such, he was shrewd enough to pretend that he composed the mixture from its various constituents. The large amount of cystin is supposed to be due to the fact that the urine which he sells is obtained from persons suffering of cystinuria. But it almost exceeds belief that an applicant could have the brazen assurance of applying for such a patent, or the referees of a patent office could possess the sublime stupidity of granting the same, in these latter days.

Dr. J. Lawrence Smith, of Louisville, Ky., formerly Professor of Chemistry in the Medical Department of the University of Louisville, has been elected a member of the National Academy of Science, of France, in place of Sir Charles Lyell, of England, lately deceased.

Medicated Tobacco.—Patent 214,240, issued to Norris M. Compton, of Meadville, Pa., is for a composition containing cubeb berries, 16 parts; English mace, 2 parts; Tonka bean, 1 part by weight, when the same is compounded with tobacco, either in the form of cigars, cigarettes, or smoking tobacco, in the proportion of one part (by weight) of the compound to nine parts of tobacco.

Medicated Candies.—Patent 214,359, issued to Geo. P. Brown, of Baltimore, Md., is for candy or bonbons, consisting of an infusion of malt, licorice-root, slippery-elm [bark ?], and sugar.

Medicated Compound.—Patent 214,453, issued to William H. Ridgway, Sharpstown, N. J., is for a compound consisting of mandrake, sarsaparilla and dandelion roots, and powdered Peruvian bark, each two ounces, and one ounce dried elder-flowers. Boil in a syrup of white sugar, 2 lbs., and water, six quarts, until it is reduced one-half. It is then strained, and one pint of apple-whiskey added.

A doctor having given a box containing a couple of pills to a country lad with instructions "To be taken at bedtime," was informed next day that they had had "no effect." The doctor closely cross-examined the youth as to whether or not he had taken them, and was assured, though perhaps not relieved, by the boy's innocent suggestion that "maybe the lid hasna' come aff yet."—*Chem. and Drug.*

The Export of Cod-liver Oil from Norway during 1878 amounted to 66,000 tons (of 100 kilos each). Of this quantity, 4,000 tons were "white steam-made cod-liver oil," 12,000 tons were light yellow medicinal oil, 12,000 tons, ordinary oil for technical purposes, 8,000 tons, yellowish-brown oil, and 30,000 tons, brown tanner's oil.

There were caught in 1878, along the whole Norwegian coast, fifty millions of cod, or rather dorsch. These were taken in twenty-five entire and thirteen half-days, falling into the period during which the fish can alone be caught.—*Pharm. Zeit.*

Sponges in Greece.—The value of the sponge fishery in Greece has risen from 20,000 fr. in 1870 to 2,000,000 fr. in 1877. The trade employs above 120 vessels, manned by 800 men. Each boat goes out four times a year and collects the sponge, at a mean value of 30,000 fr. The preparation of the sponges is very simple and inexpensive. They are first dried in the sun, and then separated into two different qualities, the average price of the first quality being 35 fr. or 40 fr. the kilogramme.

A Catholic (!) Medical Journal.—According to a notice in *El Restaurado Farmacéutico* (of Barcelona), a new medical journal has been started in that city, under the title "*El Sentido Católico en las Ciencias médicas*" (= The Catholic Sense in the Medical Sciences), which is issued "under the censure and approbation of the ecclesiastical authority"!

The *Boletin del Colegio de Farmacéuticos de Barcelona* says that "it inaugurates its existence with the papal benediction, and that it will not insert any article without previous ecclesiastical approval."

The Liberian Coffee appears to make its way rapidly into coffee-plantations and into market. It yields larger berries, bears more fruit, is hardier, and, what is very important, has been found to remain unattacked by the insect *Cemiostoma cofeëllum*, which has made such ravages among the coffee-plantations, particularly of South America and the West Indies.

The Opium Export from India during the six years below mentioned amounted to:

1868.....	87,139	chests, value	£12,330,799.
1870.....	88,638	" "	11,693,330.
1872.....	93,364	" "	13,365,228.
1874.....	88,727	" "	11,341,857.
1876.....	88,350	" "	11,148,426.
1877.....	95,870	" "	12,404,748.

Coloration of Milk.—It appears that milk is dyed in the cows. If fed with *Anchusa tinctoria* they yield a blueish milk, if with *Rheum palmatum* a yellowish, and if with madder or bed-straw (*Galium*) a reddish.

Washing Wool with Ether and Alcohol.—The result of the experiments made at Ensival, near Verviers, is stated as follows:—70,000 kilos wool and 16,000 kilos yarn were extracted. The former yielded 15,800 kilos of oil, or 22.6 per cent, and the latter 2,400 kilos, or 15 per cent. The oil was sold at 39 to 40 francs per 100 kilos. The loss of ether amounted to 4.9 kilos per 100 kilos of wool treated.—*Chem. News.*

Palm Oil.—A gentleman who has lately returned from

the West Coast of Africa has supplied the following information relating to palm oil, some of which may not be familiar to the reader:—On the crown of the palm grows the fruit. This consists of a large, pithy, egg-shaped gourd, having its outer surface surrounded and studded with nuts. These nuts often exceed 200 on a single fruit, and each consists of a kernel inclosed in an oily fibrous envelope a quarter of an inch thick, being together the size of a small walnut. When ripe, the fibrous covering is externally of a reddish-black, but internally a fine bright yellow. The seed within is black, the size of a small filbert. To prepare the palm oil which is contained in the fibrous envelope, the seed is first gently boiled to loosen the husk, then pounded and bruised by manual labor. Then the kernels being picked out, the bruised unctuous fibre is put into a bag and pressed, the palm oil exuding. This is known commercially as the *best oil*. A small quantity of *very* fine select oil is made by expression without heat, known as "cold drawn." Oil of the second quality is prepared by boiling the half-exhausted fibre, and skimming off the oil as it rises to the surface. Palm oil is known in Africa only as a thick fluid, and never "sets" till it reaches a colder climate. The black kernels, or nuts, are sent to England, where, by pressure, they are made to produce a very fine white oil, known as "palm nut kernel oil."—*Chemist and Druggist.*

The "Sullivan Ordinance."—One of the most remarkable laws to control the sale of alcoholic drinks which we have yet met with is said to have been recently passed in Missouri, to apply to the town of Sullivan. *The Wine and Fruit Reporter* publishes the entire law as follows:

SECTION 1.—No person or persons shall hereafter, by agent or otherwise, sell, barter, exchange, or give away intoxicating liquors, either malt, vinous, mixed or fermented, in this city. Every person or persons violating any of the provisions of this section, shall, upon conviction, be deemed guilty of a misdemeanor and be fined in any sum not less than $100 or more than $1,000 and be imprisoned in the county jail not less than three or more than twelve months for each and every offence, provided druggists may sell such liquors for medical and mechanical purposes only.

SEC. 2.—That each and every druggist who shall so sell any of such liquors in any quantity whatever shall publish twice every thirty days at the expense of said druggist in the nearest official newspaper a sworn statement and list of each and every sale and to whom made, the quantity of each sale and for what purpose. Any druggist violating any of the provisions of this section shall be fined in any sum not less than $1,000 nor more than $5,000, and imprisoned in the county jail not less than six months for each and every offence.

SEC. 3.—The giving away of any such liquors, by any druggist within this city, by either shift or device or in any other way, shall be held to be a selling.

SEC. 4.—That any person or persons who shall procure of any druggist any of said liquors by false representation to such druggist, shall, upon conviction, be imprisoned not less than one month for each and every offence.

The Average Annual Wine Production of Europe, according to the French Statistical Bureau, is as follows:

France	55,634,772	hectolitres.
Italy	31,500,000	"
Spain	20,000,000	"
Portugal	5,000,000	"
Austria-Hungary	22,640,000	"
Germany	6,501,000	"
Switzerland	900,000	"
Russia and Turkey in Europe	2,134,000	"
Greece and Cyprus	1,150,000	"
Roumania	661,874	"
	146,121,646	hectolitres.

1 hectolitre=26 gallons 58½ fl. oz., or in round figures 26½ gallons.

Adulterated Drugs in England.—The report of the English Local Government Board for 1877 shows that of 503 samples of drugs analyzed, 110 were reported adulterated—equal to 21.8 per cent. In the metropolis and Sussex the proportion was 6.9 per cent, and in Lancaster, Stafford, and the West Riding, 37.7 per cent. It is thought that the discrepancy is due to the fact that some analysts regard all articles not chemically pure as being adulterated.—*Med. Press and Cir.*

The Orange in the Southern United States.—This beautiful evergreen is found in every civilized country where the climate is favorable, and in colder countries it is a cherished ornament of the hot-house. It flourishes in our most southern limits, largely in Florida, and to a considerable extent in Mississippi and Louisiana, south of the lakes. In Mississippi and Louisiana it is favored by the lakes tempering the cold north winds. There seems but little difference between these States in their favorable localities. However, the tree requires delicate cultivation and studied treatment.

About the year 1816, oranges were introduced as ornaments to this country by the French. In 1830, an orange tree in a box, in bloom, brought 400 francs, and about this time some attention was paid to it by horticulturists, and blooming trees in boxes were sold at from 50 to 100 francs in New Orleans. The beginning of the cultivation of oranges for fruit in the South dates back to 1848, when numbers of trees were planted, but in January, 1856, a cold wave from Texas brought the temperature down to 19° F. above zero, and a large proportion of the trees were killed. Not much attention was paid to the cultivation afterwards until 1867 and 1868, but since then orange growing has been quite successful and has assumed commercial importance.

An ordinary tree will yield from two to ten pounds of flowers, ordinarily about seven. As soon as the petals begin to fall, a canvas is spread under the tree, and by brisk shaking the petals will fall with some leaves, which are easily separated. The time when flowers are most fragrant is early in the morning, and late in the day the odor is greatly diminished. Prior to the late conflict, negroes collected and sold orange petals in New Orleans. A tea saucer full (about two ounces) was measured out, put upon a plate, and set in the room, for which the negro received about fifty cents. From two to three plates would perfume a room for a week. Orange flowers produced in the extreme southern latitudes are believed to possess a stronger odor and more oil.—W. B. RUSH, in *Am. Journ. Pharm.*

Printing Labels on Bottles.—The *Chemist and Druggist* refers to a method of labelling bottles by a process invented in Germany. The labels are printed on the bottles themselves by a simple operation, neither paper nor mucilage being required. There is no trimming or moistening of labels. The bottles are placed in the the hands of a printer, who delivers them at the rate of 1,000 a day, labelled in a neat and finished style. The process is an actual printing, not an etching or a sand-blast. The labels can be scraped off with a knife, though they are not affected by water. They are not so opaque as paper, and beautiful effects can be obtained by using a white ground on bottles filled with colored substances. Bottles can be labelled when full as easily as when empty, and the address of the sender can be attached by this process to proprietary articles. Labelling by this method is said to cost no more than by that now in use.

Georgia Pharmaceutical Association.—At the fourth annual meeting of this Association, held at Atlanta, Ga., on the 8th of April, the following officers were elected: *President*—John Ingalls, of Macon; *Vice-Presidents*—J. M. Solomons, of Savannah; W. K. Root, of Marietta; L. E. Welch, of Albany; *Secretary*—W. A. Taylor, of Atlanta; *Treasurer*—T. L. Mossenbury, of Macon. The transactions of the Association will soon be published, when we will refer again to the business of the meeting.

Clocks with Phosphorescent Dials are among the

latest things in the market in Europe. These dials permit the time to be read off even in the dark. It is, however, necessary to expose the dials every other day either to sunlight or to the magnesium light. The phosphorescent substance consists of sulphides of strontium.—*Neueste Erf. und Erfahr.*, 1879, 140.

Plaster of Paris.—Plaster of Paris may be made to set very quickly by mixing it in warm water to which a little sulphate of potassium has been added. Plaster of Paris casts, soaked in melted paraffin, may be readily cut or turned in a lathe. They may be rendered very hard and tough by soaking them in glue-size until thoroughly saturated, and allowing them to dry. Plaster of Paris mixed with equal parts of powdered pumicestone makes a fine mould for casting fusible metals; the same mixture is useful for encasing articles to be soldered or brazed. Casts of plaster of Paris may be made to imitate fine bronze by giving them two or three coats of shellac varnish, and when dry applying a coat of mastic varnish, and dusting on fine bronze powder when the mastic varnish becomes sticky. Rat-holes may be effectually stopped with broken glass and plaster of Paris. The best method of mixing plaster of Paris is to sprinkle it into water, using rather more water than is required for the batter; when the plaster settles, pour off the surplus water, and stir carefully. Air bubbles are avoided in this way.—*Scientific American.*

Prof. Edgar Leonard Patch, G.P., the newly elected Professor of Pharmacy in the Massachusetts College, is one of the youngest members of the profession. Born in Spencer, Massachusetts, in 1851, but spending most of his schooldays in the neighboring city of Worcester, where he was a student of the High School, with a rank of over ninety; later we find him adopting pharmacy as his chosen profession, and in 1866 obtaining a situation with A. A. Burditt, of Clinton, Mass., with whom he remained two years, leaving the store for more schooling, and developing a taste for literary pursuits that have been left on record as "Patchwork," a number of poems under this title appearing in several magazines; but he soon returned to pharmacy, and entering the Massachusetts College, graduated in the class of 1872 as prize student. We find his interest continuing, as in 1873 he was elected one of the Trustees, and for the years 1874, 1875, 1876, and 1877 serving as Treasurer, and in 1878 again as Trustee. He has served as Secretary of the Alumni Association of the College, and is an active member of the American Pharmaceutical Association and the Boston Druggists' Association.

British Weights and Measures.—Of late the use of the metric system has been permissible in England in all commercial transactions involving weights and measures, but on the 1st of January last a new Act went into force, by which it is made unlawful to buy or sell by other than imperial measures, and no provision is made for the adoption of the metric system. The *London Gazette* gives the following as the authoritative standard of measures to be used in the sale of drugs:

Four fluid drachms,		weighing	218.75000 grains.
Three	" "	"	164.06250 "
Two	" "	"	109.37500 "
One	" drachm	"	54.68750 "
Thirty fluid minims,		"	27.34375 "
Twenty	" "	"	18.22917 "
Ten	" "	"	9.11458 "
Five	" "	"	4.55729 "
Four	" "	"	3.64583 "
Three	" "	"	2.73438 "
Two	" "	"	1.82292 "
One	" minim,	"	0.91146 "

Also three fluid ounces, weighing 1312.50000 grains.

PHARMACEUTICAL CALENDAR.—JUNE.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., not quoted in this Calendar will oblige us by forwarding a schedule of their meetings and a list of officers.

Day of Week.	Day of Month.	Society Meeting.
Tuesday	June 3.	Phila. Coll. Ph.—Trustees' Meet.
		Fittsburgh Coll. Phar.—Trustees' Meeting. Pharm. Meeting.
Thursday	" 5.	Louisville Coll. Pharm.—Monthly Meeting.
		N. Y. Coll. Ph.—Trustees' Meet.
		N. Y. Coll. Ph.—Alumni Meet.
Tuesday	" 10.	Chicago Coll. Pharm.—Trustees' Meeting.
		St. Louis Coll. Pharm.—Pharm. Meeting.
		Pennsylvania Pharm. Assoc., in Pittsburgh.
Wednesday	" 11.	Cincinnati Coll. Pharm.—Meet.
Thursday	" 12.	N. Y. Germ. Apothec. Society.—160 Third Ave.
		N. Y. Coll. Phar.—Alumni Asso.
		Louisville Coll. Phar.—Directors' Meeting.
		Phila. Coll. Phar.—Alumni Asso.
		Newark Pharm. Asso.—Room 4, Library Building, 3 P.M.
		Maryland Coll. Ph.—Stated Meet.
Monday	" 16,	until Friday 20:
		School of Pharm., University of Michigan.—Reading and discussion of Reports of Original Work, 9–12 A.M.
Tuesday	" 17.	Phila. Coll. Phar.—Pharm. Meet.
		St. Louis Coll. Pharm.—Trustees' Meet. Alumni Assoc. Scienti. Meet.
		Pittsburgh Coll. Pharm.—Pharm. Meeting.
		Kings County Pharm. Asso.—120 Myrtle Ave., Brooklyn, N. Y.
Wednesday	" 25.	School of Phar., Univer. of Mich.—Reception of Alumni.
Thursday	" 26.	School of Phar., Univer. of Mich.—Graduation Exercises.
Monday	" 30.	Phila. Coll. Pharm.—Stated Meet. Pharm. Meeting.
		Pittsburgh Coll. Phar.—Meet. and Second Exam. for Degrees.

BASSIA BUTYRACEA ROXBURGH.